THE
HEALTH
OF THE NATION

VARIATIONS IN HEALTH

WHAT CAN THE DEPARTMENT OF HEALTH AND THE NHS DO?

A report produced by the Variations Sub-Group of the Chief Medical Officer's Health of the Nation Working Group

22501850440

INFORMATION SERVICE
7157B 28 NOV 1995 XPQ
Hea
Wellcome Centre for Medical Science

EXECUTIVE SUMMARY

1. Over the last century, mortality rates have fallen steadily and life expectancy has increased significantly throughout the developed world. These improvements have benefited people in all sections of society in the countries concerned. However, during the same period, systematic variations in mortality rates between different groups of the population have consistently been observed in the UK and elsewhere. Within the UK there are marked differences by occupational class, sex, region, and ethnicity, in life expectancy, healthy life expectancy, and incidence of and survival from a range of diseases. Variations in mortality and morbidity have also been observed in a wide range of industrialised countries.

2. The Health of the Nation White Paper notes that effective strategies to improve health need to be sensitive to variations in health. However, despite the considerable attention paid to the associations between a range of factors and ill-health, there is little practical guidance available on effective interventions in the health arena to address health variations. Consequently, the Chief Medical Officer established a group to advise him on what steps the Department of Health and the NHS should be taking to tackle variations, and to identify where further research was needed. This report is the outcome of that group's work.

3. While socioeconomic, gender, regional and ethnic differences are widespread, and are observable in all countries, the magnitude of these differences is not fixed; differences are recorded within and between countries and over different time periods. It is likely that cumulative differential exposure to health damaging or health promoting physical and social environments is the main explanation for observed variations in health and life expectancy, with health related social mobility, health damaging or health promoting behaviours, use of health services, and genetic or biological factors also contributing.

4. Everybody should have the opportunity to attain their full potential for health. Variations indicate the extent of potentially preventable ill-health and premature death. An important way of achieving the Health of the Nation targets is to improve the health of the least healthy groups closer to the levels attained by the most healthy groups.

5. Within the NHS, there is clearly concern about variations in health, as is shown by a wide variety of work to address the issue, some of which is illustrated in this report. However, much of this work is still at the margins of health authority activity and a great deal is unevaluated. What is now needed is for the NHS at local level to undertake a more systematic identification of health variations and to design and implement measures to tackle them. Future interventions must be rigorously evaluated, particularly for cost-effectiveness, and the findings of evaluations should be disseminated widely. We identify a number of specific areas in which the NHS can take action.

6. Specifically, we recommend that:

- health authorities and GP purchasers should have a plan for identifying and tackling variations, and for evaluating interventions;
- the plan should include provision for working in alliance with other relevant bodies;
- health authorities, GP purchasers and Trusts should take steps to monitor access to services to safeguard equitable access.

7. A number of aspects of the Department of Health's work provide an opportunity to tackle health variations, but not all of these opportunities are being exploited. The Department should set specific objectives in relation to reducing variations, and make sure that relevant aspects of policy and practice are designed to help meet those objectives. We identify a number of specific areas in which the Department can take action.

8. Specifically, we recommend that the Department of Health:

- should work actively in alliance with other government departments and other bodies to encourage social policies which promote health;
- should hold the NHS to account for implementation of the recommendations at para. 6. above;
- and should take forward our recommendations on research (see para. 11 below).

9. Given the many and complex factors which contribute to variations in health, the importance of alliances, at both national and local level, cannot be overstated. Genuine progress will depend on the involvement of other government departments, local authorities, the voluntary sector, and individuals and communities themselves. The Department of Health and the NHS have a particular responsibility in drawing attention to the need for such alliances and providing leadership and support.

10. A literature review commissioned by the group showed that the evidence to date on practical public health interventions in which the NHS might engage to reduce variations in health is weak. There were, however, a number of tentative conclusions to be drawn from the review on effectiveness, and these are listed. The relatively disappointing outcome to the review does not support the conclusion that nothing should be done. Rather, it gives added weight to our recommendations on research needs, and on the need for better evaluation of local activities.

11. In respect of research, we have recommended that:

- purchasers undertake rigorous evaluation of interventions which they implement;
- they are supported in the task of evaluation by the establishment of a clearing house;
- the MRC, ESRC and the Department of Health should coordinate their programmes of research;
- a Department of Health research consultation exercise should recommend priorities for the evaluation of interventions to address health variations, research to address the needs of particularly vulnerable groups of the population, and basic research into causal processes.

12. We welcome and endorse the Chief Medical Officer's recognition that action to tackle variations in health is central to the achievement of the government's Health of the Nation strategy. We conclude that tackling health variations is an aspect of a great deal of the work which the Department and the NHS is doing already, but one which is not being given sufficient emphasis. What is needed now is not a new 'initiative', isolated from mainstream work, but a much more explicit targeting of the issue within existing policies and activities. The context is favourable: the Department is leading a government-wide strategy to improve the nation's health, and the NHS is not only a key player in that strategy, but also has a stronger focus than ever before on identifying and meeting the needs of local populations. There already exist vehicles for taking work forward, and many of the tools needed are also available.

CHAPTER 1: INTRODUCTION

The Problem

1.1 For several decades now it has been well documented that across the developed world, there are variations in the extent of sickness and premature death between different groups within populations. Some groups can expect to enjoy substantially better health and longer lives than others. These variations in health status are associated with a range of often interacting factors: geography, socio-economic status, gender, environment, ethnicity, culture, and lifestyle. Variations persist even as health improves overall across the population.

1.2 The Health of the Nation White Paper notes that effective strategies to improve health need to be sensitive to variations in health. It states that "it will be necessary to identify the variations that occur in particular health problems in order to concentrate efforts on people at particular risk, and to adopt different strategies for different groups." Priorities and Planning Guidance issued to the NHS in 1994/95 asked authorities "to address variations in health between regions and between social groups" and 1995/96 guidance stated that "services should not only improve the health of the population as a whole, but should aim to reduce variations by targeting resources where needs are greatest".

1.3 However, despite the considerable attention paid to the associations between a range of factors and ill-health, there is little practical guidance available on effective interventions in the health arena to address health variations. It was this gap that prompted the Chief Medical Officer to bring together - within the context of the Health of the Nation strategy - a group of people with particular knowledge of the field. The group was asked to advise him on what steps the Department of Health and the NHS should be taking to tackle variations, and to identify where further research was needed. This report summarises the results of our work. While we were conducting our work, a further document was published which adds to the available information in this area.[1]

---

[1] 'Tackling Inequalities in Health: An agenda for action'. Ed. M Benzeval, K Judge, M Whitehead; King's Fund 1995: ISBN 1 85717 188 1

The Group

1.4 The group's membership is set out at Annex A.

1.5 Our terms of reference were:

Within the key areas for action identified by the Health of the Nation[2], i.e.,

- Coronary heart disease and stroke
- Cancers
- Mental illness
- HIV/AIDS and sexual health
- Accidents

- by spring 1995 to report to the Chief Medical Officer as to how the Department of Health and the National Health Service might make best use of any existing information to tackle ethnic, geographical, socio-economic and gender variations in health status, with particular reference to the strength of observed relationships and evidence about the effectiveness of interventions;

- by the end of 1994 to report to the Department's Director of Research and Development on areas in which new epidemiological and research information is needed to inform the targeting of interventions for high risk groups of the population and further understanding of the underlying processes relevant to policy on longer term intervention; and

- to support the Public Health Information Strategy on health variations aspects of its work.

Our Approach

1.6 The task we were given by our terms of reference is an important one, and the establishment of this group particularly timely. Currently, the Department of Health is leading a government-wide strategy to improve the nation's health, and the NHS is not only a key player in that strategy, but also has a stronger focus than ever before on identifying and meeting the health needs of local populations. These developments could prove great strengths in focusing attention and action on health variations. Although many of the factors which influence health go beyond the responsibilities of the Department of Health and the NHS (and were, therefore, outside the scope of our work), we nonetheless see the Department and the NHS as playing an important role.

---

[2] The specific targets set in each of the key areas are at Annex B.

Reviewing the Available Evidence

1.7 We began our work by looking at:

- what was known about variations in the areas covered by Health of the Nation and, where relevant, more widely;
- what was currently being done by the NHS and the Department of Health to tackle variations;
- what was known about interventions to reduce variations in health status, and their effectiveness or otherwise.

1.8 To help with the last of these tasks, we commissioned a literature review which looked at the available evidence internationally. We hoped that this would prove a useful resource not only for this group but also for NHS practitioners and others who would be planning interventions in the future.

Identifying Priorities for Action

1.9 The Health of the Nation strategy emphasised the need for establishing clear priorities for action to improve health. Three criteria governed the selection of areas to tackle:

i the area should be a major cause of avoidable mortality or morbidity;

ii effective interventions should be possible;

iii it should be possible to set targets and monitor progress towards them.

We thought it equally important that interventions to tackle variations should be guided by similar considerations of priority and likely effectiveness. We therefore defined the following criteria against which to judge potential interventions:

- the variation addressed should be associated with a major cause of premature mortality or avoidable morbidity;
- it should be possible to set objectives and targets and to monitor the outcome of interventions in relation to the chosen variation;

- the variation should be of a significant scale (e.g. a wide range in the SMRs for a particular condition across different groups) or in the case of a smaller difference, it should affect a large number of people;

- interventions should be feasible: i.e., broadly achievable within existing resources, covering reasonable areas for action by the Department and the NHS - either alone or in alliance with other organisations - and acceptable culturally and socially;

- interventions would be especially urgent where in addition to the above criteria, it could be shown that the variation was widening or getting 'worse';

- given the complex causality of health variations, interventions were likely to be especially valuable where they involved alliances/cross-sector working.

Content of Report

1.10 **Chapter 2** of the report reviews briefly what is known about variations in health. At the related **Annex C**, there are wide ranging illustrations of the ways in which health status varies between groups in the areas covered by Health of the Nation.

Chapter 3 sets out why we believe it important that the Health of the Nation strategy should incorporate work to try and reduce variations in health status between different groups;

Chapter 4 describes the way in which the NHS and the Department of Health are tackling variations in health status, and gives illustrations of specific initiatives within the NHS;

Chapter 5 summarises the findings of the literature review commissioned to look at available evidence about the effectiveness of interventions;

Chapter 6 discusses research needs and priorities, in the light of Chapters 2, 4 and 5;

Chapter 7 pulls together the results of our work, draws conclusions and makes recommendations.

CHAPTER 2: KNOWLEDGE OF VARIATIONS

The Magnitude of Variations in Health

2.1 Over the last century mortality rates have fallen steadily and life expectancy has increased significantly throughout the developed world. These improvements have benefited people in all sections of society in the countries concerned. In England and Wales over the last century life expectancy at birth has increased from 44 years for boys and 48 years for girls to 74 years for boys and 79 for girls. Infant mortality now stands at 6.2 per thousand live births as against 150 a hundred years ago (figs 2.1 and 2.2)

2.2 However, during that same period systematic variations in mortality rates between different groups of the population have consistently been observed and documented in the United Kingdom and elsewhere. In the last twenty years an extensive research literature has been published which has shown continuing, and in some cases increasing, differentials in mortality and morbidity rates between socio-economic groups, men and women, regions of the country, and ethnic groups.

2.3 Within the UK there are marked differences by occupational class, sex, region, and ethnicity in life expectancy, healthy life expectancy, and incidence of, and survival from, a range of diseases. For example:

Occupational Class:

- life expectancy at birth is currently around 7 years higher in the Registrar General's social class I than in social class V;
- children in social class V are four times more likely to suffer accidental death than their peers in social class I;
- of the 66 major causes of death in men, 62 were more common among those in social classes IV and V combined than in other social classes;
- of the 70 major causes of death in women, 64 were more common in women married to men in social classes IV and V;
- women in social class I have a registered incidence of breast cancer 1.5 times greater than women in class V.

sex:

- life expectancy at birth is 6 years greater for women than for men;
- up to age 65, men have 3.5 times higher risk of death from coronary heart disease (CHD) than women;
- suicide is twice as common among men than among women.

geography:

- men and women living in the North and North-West have a significantly higher standardised mortality ratio (SMR) than those living in East Anglia. While both have improved over time, the position for men in the North in 1989-1993 was only slightly better than that for East Anglia in 1969-73 (Fig 2.3).
- Geographic differences in SMRs for all causes, smoking related disease, and CHD are illustrated in figure 2.4. Electoral wards were classified by degree of social deprivation. Within each of the regions shown there is an association between the extent of deprivation and mortality. However, for any given level of deprivation, there are differences in mortality between regions.[3]

ethnic group:

- stillbirth rates in England and Wales among women born in the New Commonwealth are 1.6 times higher than for women born in the UK;
- mortality rates from CHD for those born in the Indian subcontinent are 36% higher among men, and 46% higher among women, compared with rates for England and Wales as a whole;
- Afro Caribbeans in Britain are 3-6 times more likely than whites to be diagnosed as schizophrenic.

The International Position

2.4 Social variations in mortality and morbidity have been observed in a wide range of industrialised countries including, for example, Scandinavia, the Netherlands, USA, New Zealand and the formerly communist countries in

---

[3] Eames M, Ben Shlomo Y, Marmot MG. Social deprivation and premature mortality: regional comparison across England. BMJ 307, 1097-1102 1993.

Eastern and Central Europe. Although the variables available for study and the priority given to different dimensions of social variations in health vary between countries (for example, there is a greater emphasis in the USA on differentials by race than by occupational class, and several countries have traditionally concentrated most on regional differences) the broad picture of social variations in health, and changes in these over time, is similar across developed countries. Poorer socio-economic groups do worse than better off socio-economic groups, women live longer than men but have higher rates of non fatal illness (especially mental ill health), certain regions within countries show consistent health advantages over others, and minority ethnic or migrant groups tend to have poorer health and life expectancy than the majority population.

2.5 Recent comparative studies have found the smallest occupational class variations among men in Norway and Denmark, larger differences in Sweden (1.5 x Norway), England and Wales (2 x Norway), and the largest differences in Finland (4-5 x Norway) and France (6-8 x Norway). This suggests that the often cited differences between Sweden, and England and Wales, are small when viewed in a wider international context.[4]

Trends

2.6 Studies in the UK have reported increasing socioeconomic differentials in mortality.[5] Figure 2.5 shows a steadily diverging trend in SMRs for men by occupational class from 1949-1983, using cross-sectional census data (Table 1 - although these data must be viewed with some caution owing to changes in the underlying occupational classification), and from 1976-81 to 1986-89 using cohort study data (Table 2).[6] Figure 2.6 shows the widening gap between the early 1970s and 1980s in social class differences from lung cancer, CHD and stroke.

2.7 Studies in other countries have also found increased social differentials in mortality over the last couple of decades. A comparison of death rates in the USA in 1960 and 1986 showed that although death rates improved in the population as a whole, differences in mortality by educational level and income had increased for both sexes and all races, death rates having fallen faster among the better educated and the higher income groups.[7] In New Zealand mortality rates among men declined by 15% between 1975-7 and 1985-7, but the social class differences were slightly greater in the later compared with the earlier period.[8]

---

[4] Kunst AE and Mackenbach, JP. International variation in the size of mortality differences associated with occupational status. Int J Epidemiology, 23, 4, 742-750, 1994).

[5] Marmot MJ and McDowell ME, Mortality decline and widening social inequalities, Lancet, 274-276: 1986. Phillimore P, Beattie A and Townsend P. Widening inequality of health in Northern England 1981-1991, BMJ 308, 1125-8, 1994; McLoone P and Boddy FA. Deprivation and mortality in Scotland 1981 and 1991. BMJ 309 1465-70, 1994.

[6] It is important to note that absolute changes in mortality cannot be inferred from Figure 2.5

2.8 Sex mortality ratios (male:female deaths) have increased substantially during the twentieth century. An analysis of 23 developed countries between 1979 and 1987 showed that sex mortality ratios continued to increase for 25-34 year olds but showed mixed trends for other adult age groups; for instance among 55-64 year olds sex mortality ratios increased in Southern and Eastern European countries and Japan, but decreased in Northern European and Anglophone countries.[9] The causes of death which contribute to men's higher mortality in developed countries are ischaemic heart disease, lung cancer, and accidents and other violence. Trends over time in sex mortality ratios in England and Wales are shown in Figure 2.7.

Explanations for Variations in Health

2.9 There is now an extensive research literature on variations in health. The Black report[10] stimulated considerable interest in the topic in the UK and worldwide. Since the publication of that report there have been a number of methodological developments. These include the use of longitudinal designs; the linking of census or birth certificate data with death certificate data; the expansion of the range of indicators both of socio-economic position (e.g. to include housing tenure, car ownership and education, or different aggregations of occupational classes), and of health (e.g. to include Years of Potential Life Lost, or Healthy Life Expectancy); and better summary measures of differences between groups.

2.10 Data on variations in health have become available from a number of important studies in the UK. These include the three national birth cohorts (born in 1946, 1958 and 1970), the OPCS Longitudinal Study, the Health and Lifestyle Survey, the British Regional Heart Study, the Scottish Heart

---

[7] Pappas G, Queen S, Hadden W, Fisher G. The increasing disparity in mortality between socio-economic groups in the United States, 1960 and 1986. New Eng J Med 329, 103-109, 1993.

[8] Pearce N, Pomare E, Marshall S and Borman B. Mortality and social class in Maori and non Maori men; changes between 1975-7 and 1985-7. New Zealand Medical Journal 106; 193-196; 1993.

[9] Waldron, I Recent trends in sex mortality ratios for adults in developed countries, Social Science and Medicine, 36, 4, 451-562 1993

[10] Inequalities in health; report of a working group. DHSS 1980

Health Study, and the Whitehall study. Other information on social variations in health and health related behaviours has become available from a number of surveys undertaken by OPCS including the Health Survey for England, and surveys on specific topics such as infant feeding[11] and diet.[12] These new sources and approaches quantify different aspects of social variations and improve our understanding of possible explanations.

2.11 Explanations for observed variations in health can broadly be divided into the following groups:

- artifacts of measurement;
- health related mobility;
- biological (including genetic) factors;
- health related behaviours;
- access to and use of health services;
- exposure to different environments including living and working conditions;
- psychosocial factors.

Artefact

2.12 The extensive research conducted since the Black Report has shown that while the magnitude of socio economic variations may vary somewhat according to the particular measures of socio economic status or health used (for example, there are steeper social class gradients using Years of Potential Life Lost than using SMRs[13]), the broad picture of worsening health and decreasing life expectancy with declining socio economic status cannot be explained away as an artefact of measurement. Some artefacts of measurement may also influence observed variations by sex (e.g. one or other sex being more likely to be allocated a particular diagnosis or cause of death), by region (e.g. the mortality rates of some areas being inflated by the presence of long stay hospitals or other institutions), and by ethnicity (e.g. 'country of birth' may not accurately represent ethnic group membership). Methodological refinements can reduce the impact of such artefacts, which in any case do not appreciably change the broad picture of variations summarised in para 2.4.

---

[11] White A, Freeth S, O'Brien M Infant feeding 1990, London HMSO, 1992

[12] Gregory J, Foster K, Tyler H, Wiseman M The dietary and nutritional survey of British adults. London HMSO 1990, and Gregory J Collins DL, Hughes J, Clarke P, Davies P The National Diet and Nutritional Survey; children aged 1 1/2 to 4 years London HMSO 1994

[13] Wagstaff A, Paci P, van Dooslaer E; On the measurement of inequalities in health Social Science and Medicine 33,5, 545-557, 1991.

Health Related Mobility

2.13 Similarly, although poor mental or physical health can under some circumstances lead to social disadvantage (e.g. unemployment, poverty, homelessness) selective social mobility based on health cannot explain away the broad picture of poorer health associated with social disadvantage. Those who migrate within and between countries tend to be healthier than those they leave behind, which may have some impact on regional and ethnic variations in health, but this cannot explain the subsequent health disadvantages faced by many ethnic minority groups, and indeed in the short run would be likely to minimise rather than exaggerate those health disadvantages.

Behaviours

2.14 Behaviours such as smoking, diet, exercise, alcohol consumption, infant feeding practices and use of preventive health services are patterned by socioeconomic group, sex, region and ethnic group and contribute to variations in health. However they have been shown to explain only a part of social class or regional gradients. For example, risk factors such as smoking, drinking and diet only explain around a third of the social class gradient in CHD mortality and morbidity.[14] In the West of Scotland rates of lung cancer are higher among men than elsewhere at every level of smoking, including not smoking, suggesting that factors other than smoking prevalence may also contribute to regional differences.[15] Sex differences in health related behaviours such as diet, smoking, alcohol consumption, types of leisure time exercise, and use of preventive health services vary over time and among different social, regional and ethnic groups, and contribute to, but do not entirely explain, gender differences in morbidity and mortality. The diet and smoking behaviour of South Asians is often much closer to coronary prevention advice than among other groups, and their excess risks of CHD cannot therefore be attributed solely to poor health behaviours.

Interaction Between Biological and Environmental Factors

2.15 Some variations may have a biological, including genetic basis; for example the greater propensity of men, and of people from the Indian subcontinent, to develop CHD. However, these genetically based predispositions interact with behaviours and environment and are not fixed in their expression. Women's rates of CHD and lung cancer may converge with men's following periods in which men's and women's smoking rates have converged, and there are low rates of CHD in rural areas of the Indian subcontinent but high CHD mortality rates among those of Indian subcontinent origin living in the UK. Similarly, the high rates of schizophrenia found among Afro Caribbeans living in London are not matched by high rates in the Caribbean. The life expectancy difference between men and women has varied historically and currently varies between different types of society, suggesting that the male/female mortality ratio is sensitive to the social and physical environments to which men and women are exposed.[16] The reversal, within a relatively short time period, of the previous relation between social class and CHD (higher rates among higher social classes) to its current pattern (higher rates among lower social classes) renders a genetic explanation of social class differences in heart disease implausible.[17] There may be some genetic component to regional variations, but studies of migrants within Britain, and of migrants between countries, show that migrants tend to take on the health patterns of the regions to which they migrate, suggesting a limited role for genetic explanations of regional differences.[18]

---

[14] Rose G and Marmot MG Social class and coronary heart disease. Br Heart J 45, 13-19, 1981 Woodward M, Shewry M, Smith WC, Tunstall Pedoe H. Coronary heart disease and socioeconomic factors in Edinburgh and North Glasgow. The Statistician 39 319-329, 1990

[15] Gillis CR, Hole DJ, Hawthorne VM Cigarette smoking and male lung cancer in an area of very high incidence; report of a general population cohort study in the West of Scotland . J Epid Commun Hlth 42, 44-48, 1988

Living and Working Conditions

2.16 The Birth Cohort Studies have shown the importance for childhood and adult physical and mental health of material aspects of living conditions such as household income and wealth, type and quality of housing, diet, working conditions, and air pollution, and have shown that these help to explain variations in health by socioeconomic group and by area of residence.[19] A

---

[16] Macintyre S Gender differences in longevity and health in Eastern and Western Europe, in Platt S, Thomas H, Scot S, Williams G eds Locating health; sociological and historical explanations, Avebury, Amersham, 1993

[17] Rose G and Marmot MG Social class and coronary heart disease. Brit Heart Journal 45,13-19, 1981

[18] Strachan DP, Leon D, Dodgeon B. Mortality from cardiovascular disease among inter-regional migrants in England and Wales BMJ 310, 423-427 1995; Marmot MG, Syme SL, Kagan H, Kato JB, and Belsky J. Epidemiological studies of coronary heart disease and stroke in Japanese men living in Japan, Hawaii and California. American Journal of Epidemiology. 102, 514-525, 1975

[19] Wadsworth MEJ, The Imprint of Time, Childhood History and Adult Life; Oxford, Clarendon Press, 1991

number of British studies have consistently found that asset based measures (income, housing tenure, car ownership) are associated with mortality rates, and these measures vary by social class and region. Regional differences relate to the distribution of industry and employment, climate, urbanisation, and other factors.[20] The labour market is highly segmented and the likelihood of obtaining employment, and the type of employment available and its typical working conditions and remuneration, differs by social class, gender, region and ethnicity. The health of men is more likely than that of women to have been affected by particular occupational risks such as those arising from mining, quarrying, construction, and working with asbestos, and occupations with certain risk profiles (mines, shipyards, potteries, textiles and so on) tend to be concentrated in particular parts of the country. The domestic division of labour between men and women means that they are differentially exposed to risks in the home and the local area. Recent migrants and members of ethnic minorities may be concentrated in occupational sectors with certain health risks (in the 1970s a high proportion of those of Indian and Pakistani origin were concentrated in social classes I and IV and V, and a high proportion of West Indian or African origin were concentrated in social classes IV and V) and may work long hours in order to send money back to relatives in their communities of origin.

Psycho-social Factors

2.17 Since social class gradients in male mortality were first shown in 1921, it has been apparent that the relationship between social class and health tends to follow a regular gradient (i.e. each successive increment in socioeconomic status being associated with an improvement in health or life expectancy), rather than there being a cut off point below which people have poorer health than the rest of the population because they are deprived of adequate food, housing, warmth etc.[21] This has led to speculation about the importance of psycho-social factors in the genesis of socio-economic variations. Data from the Whitehall II study of British civil servants point to the importance of psycho-social factors in living and working conditions. The lower the social status, the greater the frequency of reported financial problems, stressful life events, inadequate social supports and, at work, low control, little variety and use of skills, and low satisfaction[22] The Birth Cohort Studies have shown the importance of factors such as education and quality of family relations for physical and mental health.[23] Degree of urbanisation, density of population and types of employment contribute to geographic variations in mental health and suicide[24] The different social roles occupied by men and women, and their attendant stresses and strains, have been shown to contribute to gender variations. Ethnic minority groups may experience high stress from separation from kin, language difficulties, and racial discrimination in housing, education, and employment which contribute to poor mental wellbeing and excess risks of CHD.

---

[20] Britton M, Fox AJ, Goldblatt P, Jones DR and Rosato M The influence of socio-economic and environmental factors on geographic variations in mortality. OPCS, Mortality and Geography, HMSO London 1990

[21] Stevenson THC The vital statistics of wealth and poverty, Journal of the Royal Statistical Society, XCI 1928 p207-230.

Health Services

2.18 Differential access to and use of health services may contribute to variations in health and longevity, or may help ameliorate the manifestations of variations in health. Access to preventive, curative and rehabilitative health services is available to all UK residents, free at the point of service. However, there may be regional or area variations in the provision of particular services; it may be more difficult, for example, to provide good quality and accessible services in rural or inner city areas. Additionally, there are variations in the uptake and effectiveness of services. Socially disadvantaged groups and ethnic minority members make less use of preventive services (e.g. immunisation, cervical screening, antenatal care), and survival rates from some conditions are poorer among socially disadvantaged groups.[25] Thus, for example, although the incidence of breast cancer is higher among higher social class women, survival rates are also higher in such women (even controlling for stage of presentation).[26]

---

[22] Marmot MG, Smith GD Stansfield S, Patel C, North F, Head J, White I, Brunner E, Feeney A. Health inequalities among British civil servants: The Whitehall II study. Lancet 1991;**337**:1387-93.

[23] Wadsworth MEJ, The Imprint of Time: Childhood History and Adult Life, Oxford, Clarendon Press, 1991; Power C, Manor O, Fox J, Class and Health; the early years, Chapman and Hall, London, 1991

[24] Charlton J. Trends and patterns in suicide in England and Wales; International Journal of Epidemiology; June 1985

[25] Kogevinas, LS no 5 1990; Leon D and Wilkinson R Inequalities in prognosis; socioeconomic differences in cancer and heart disease survival. in Fox, J ed, Health inequalities in European Countries, Gower, 1989

[26] Carnon A, Semwogere A, Lamont A, Hole DJ, Mallon EA, Gillis CR. Relation between socioeconomic deprivation and pathological prognostic factors in women with breast cancer. BMJ, 309, 1054-7, 1994

Other

2.19 Recent work has suggested the possible importance for adult health, and for social variations in adult health, of biological 'programming' in utero and early infancy, that programming being perhaps related to maternal health, nutrition and social circumstances.[27] Work from the Birth Cohort studies has indicated the additional importance of cumulative exposure to social advantage or disadvantage, and variation in behaviours, over the lifespan.[28]

Conclusions

2.20 The existence of systematic variations in mortality rates has now been well documented in the UK and elsewhere in the developed world. While socioeconomic, gender, regional and ethnic differences are widespread, and are observable in all countries, the magnitude of these differences is not fixed; differences are recorded within and between countries and over different time periods, indicating that variations are susceptible to change through intervention.

2.21 It is clear that the broad types of explanation briefly described above are not mutually exclusive, and that there are interactions between these categories; for example, the expression of genetic or biological predispositions depends on behavioural or environmental factors, and behaviours may be closely related to available material resources, social roles, and living or working conditions. The relative importance of these different types of explanation also differs between different conditions (e.g. genetic explanations may be more important for CHD than for accidents), and between different circumstances (e.g. recent migrants may show markedly different patterns of behaviour and use of health services, and experience very different living and working conditions from the host populations, but subsequent generations may assimilate much more to local patterns).

2.22 It is likely that cumulative differential lifetime exposure to health damaging or health promoting physical and social environments is the main explanation for observed variations in health and life expectancy, with health related social mobility, health damaging or health promoting behaviours, use of health services, and genetic or biological factors also contributing. Their importance will vary according to the variation considered, the health indicator used, and the setting. Socio-economic and cultural factors underpin all the explanations for observed differences.

---

[27] Barker D Fetal and infant origins of disease. BMJ Publications London 1992; Barker D, Mothers, babies and disease in later life; BMJ Publications London 1994.

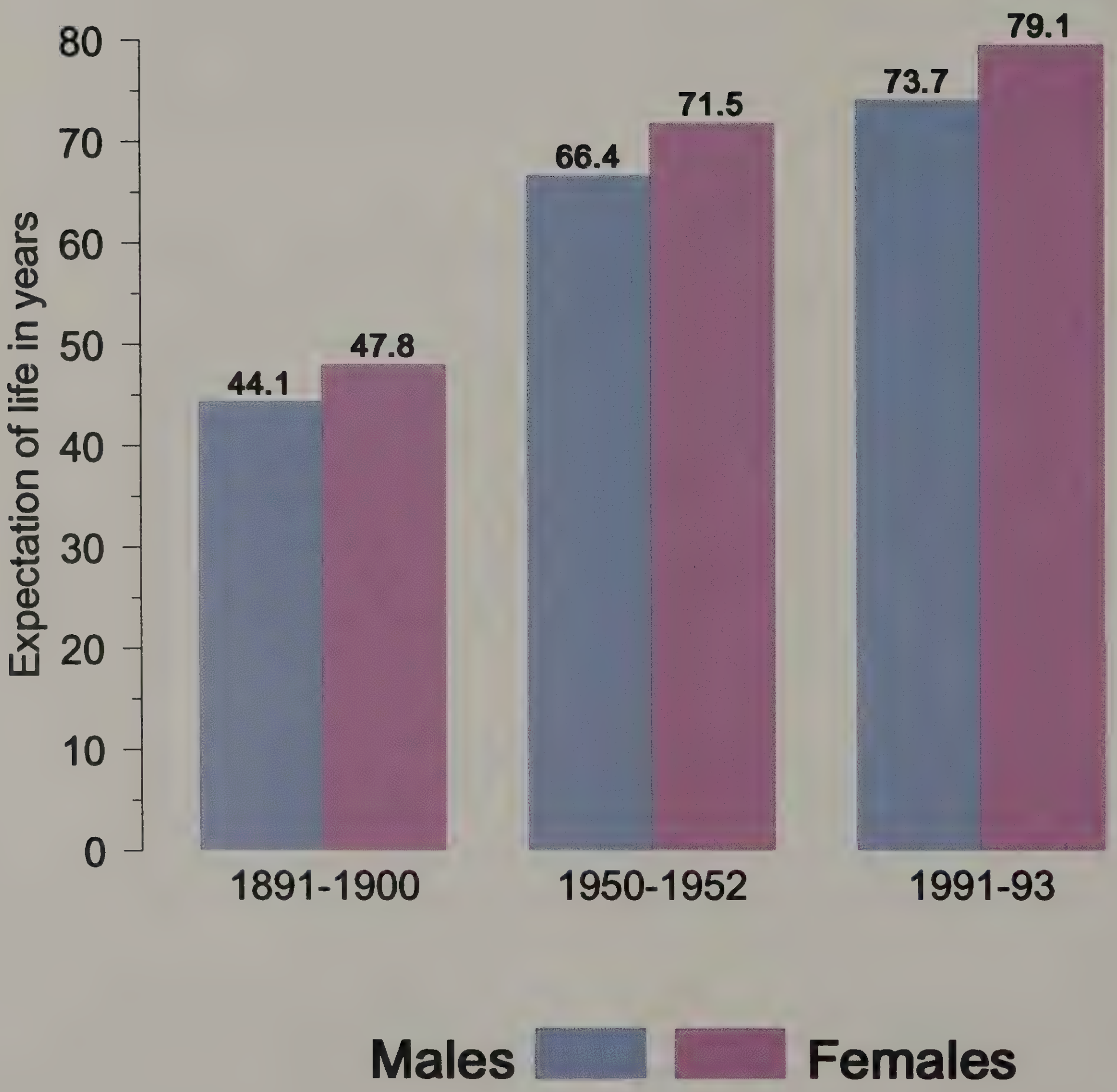
[28] e.g. Mann SLO, Wadsworth MEJ, Colley JRT, Accumulation of factors influencing respiratory illness in members of a national birth cohort and their offspring: J Epidemiology and Community Health, 46, 286-292, 1992.

2.23 Much is known about the determinants of variations in health in the UK. However, more detailed causal models are required in order to render health policy interventions more effective. This involves detailed examination of the links between, on the one hand, socio economic status, gender, area of residence and ethnicity and exposure to health damaging environments, use of health services, behaviours, etc.; and on the other, between these experiences or behaviours and specific aspects of health (see Chapter 6 on research needs).

Figure 2.1

Expectation of Life at Birth

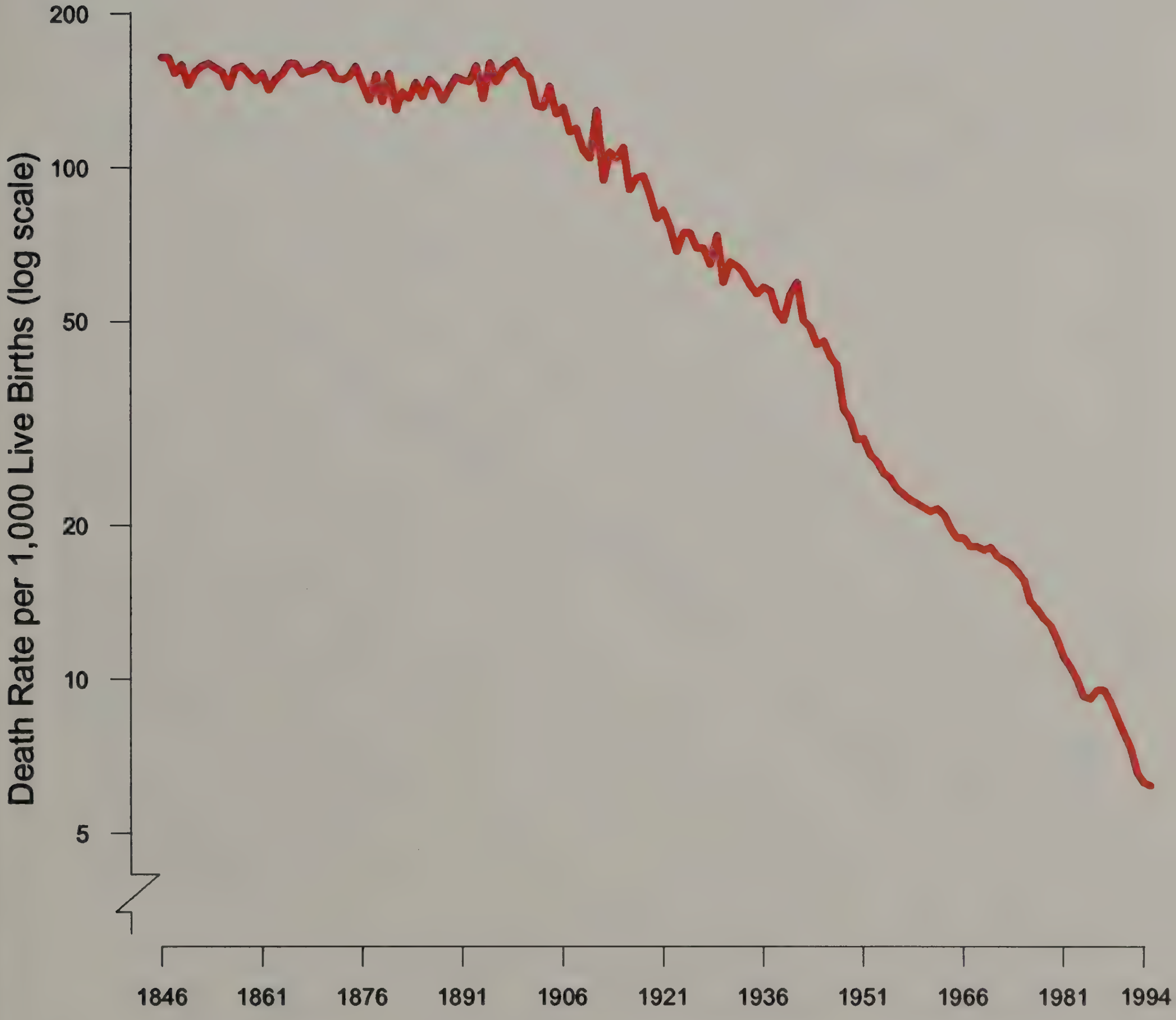
England and Wales 1891 - 1993



Source: OPCS Mortality Statistics, Series DH1 (1891-1952) and Government Actuary's Department

Infant Mortality Rates

England and Wales 1846 - 1994

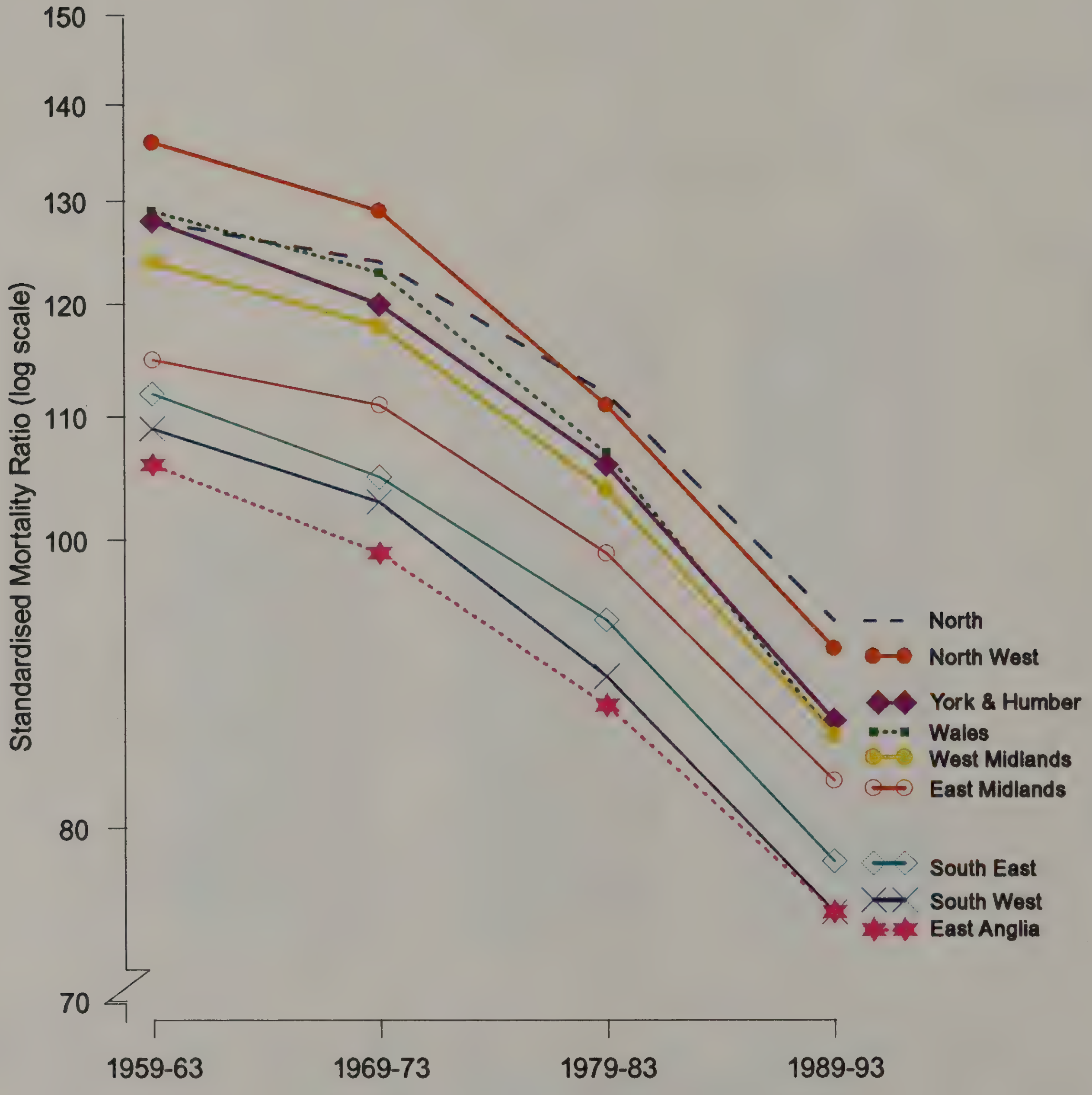


Source: OPCS Birth Statistics, Mortality Statistics: childhood, and Updates no.6

Male Standardised Mortality Ratio* for All Causes

by Geographical Region England 1959-63 - 1989-93

(England and Wales 1979-83=100)

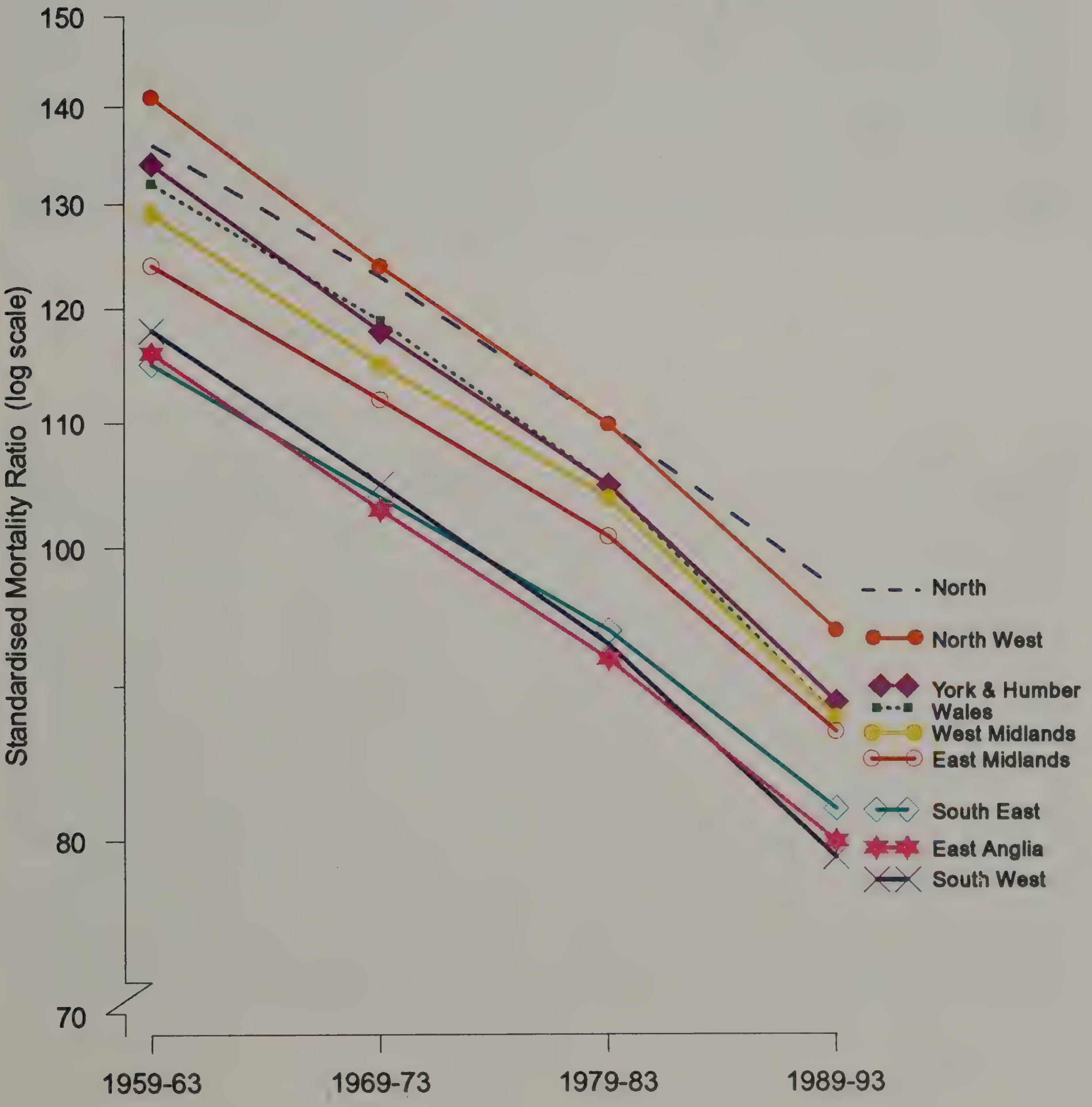


* A standardised mortality ratio is used to compare the mortality of a particular sub-group of the population relative to a standard, adjusting for differences in population age structures. It is calculated by applying the age-sex specific rates from the standard population to the sub-group to obtain the 'expected' number of deaths and comparing the actual numbers of deaths in the latter with the expected number. Where different standards are used for different time periods (as in Figure 2.5) it is only possible to show changes in relative differences over time, not changes in absolute differences or absolute values. If standardisation has been carried out using a single standard (as in Figure 2.3a and b) it is possible to infer both absolute and relative changes.

Source: OPCS

Female Standardised Mortality Ratio* for All Causes
by Geographical Region England 1959-63 - 1989-93

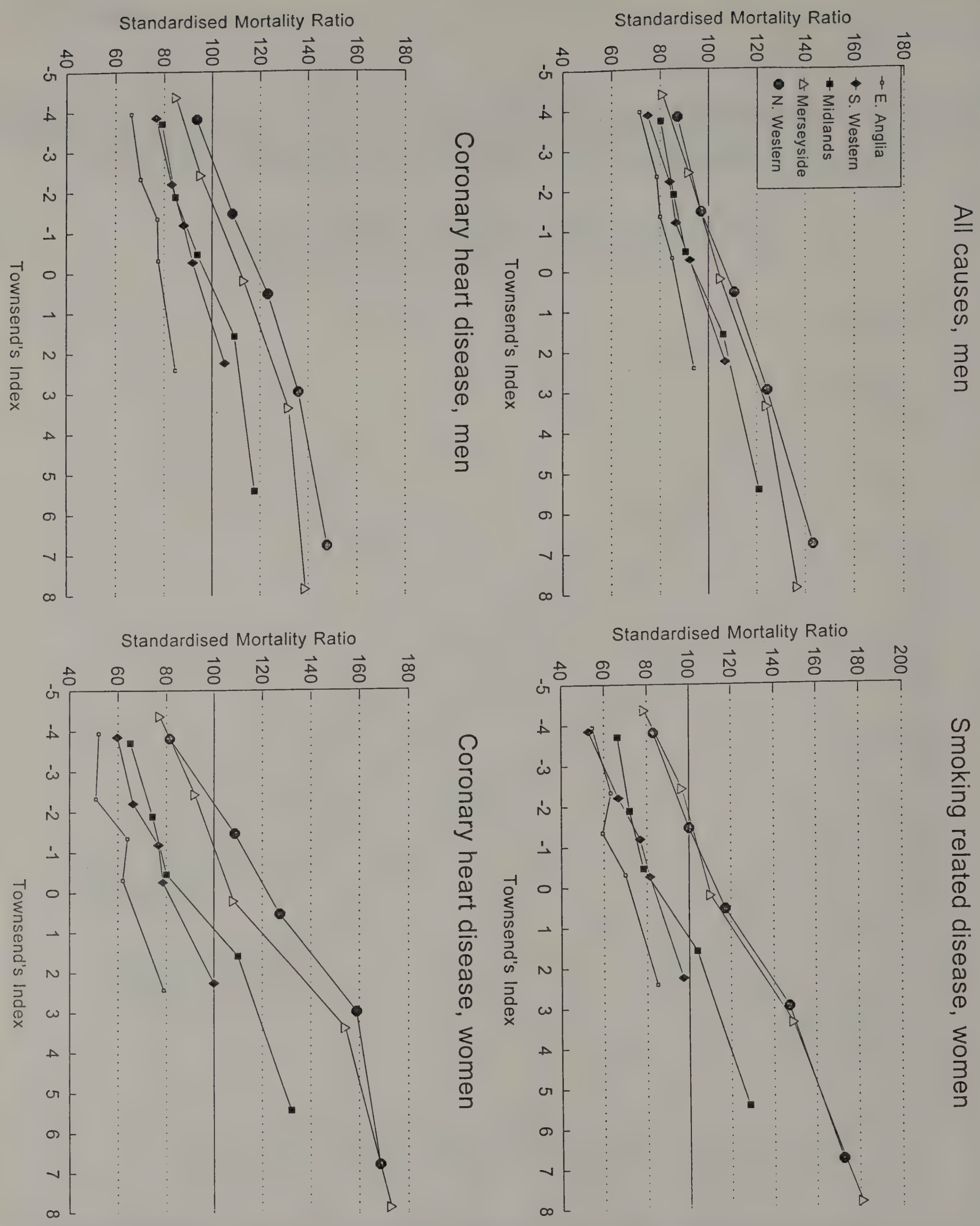
(England and Wales 1979-83=100)



* A standardised mortality ratio is used to compare the mortality of a particular sub-group of the population relative to a standard, adjusting for differences in population age structures. It is calculated by applying the age-sex specific rates from the standard population to the sub-group to obtain the 'expected' number of deaths and comparing the actual numbers of deaths in the latter with the expected number. Where different standards are used for different time periods (as in Figure 2.5) it is only possible to show changes in relative differences over time, not changes in absolute differences or absolute values. If standardisation has been carried out using a single standard (as in Figure 2.3a and b) it is possible to infer both absolute and relative changes.

Source: OPCS

Figure 2.4



Relation between premature mortality from different causes in men and women and degree of deprivation divided into fifths for five representative regions

Eames M, Ben Shlomo Y, Marmot MG. Social deprivation and premature mortality: regional comparison across England. BMJ 307, 1097-1102, 1993.

Figure 2.5

Mortality of men aged 15-64 at death by social class (based on occupation): standardised mortality ratios for England and Wales

Table 1 From Decennial Supplements

Social class (based on occupation)		1949-53	1959-63	1970-72	1979-83*
I	Professional	86	76	77	66
II	Managerial	92	81	81	74
IIIN	Skilled, non-manual	} 101	} 100	}104	93
IIIM	Skilled, manual				103
IV	Partly skilled	104	103	114	114
V	Unskilled	118	143	137	159

SMRs calculated using total national deaths and 10% samples from censuses for denominators

* men aged 20-64, 1979-80 & 1982-83

Table 2 From OPCS Longitudinal Study

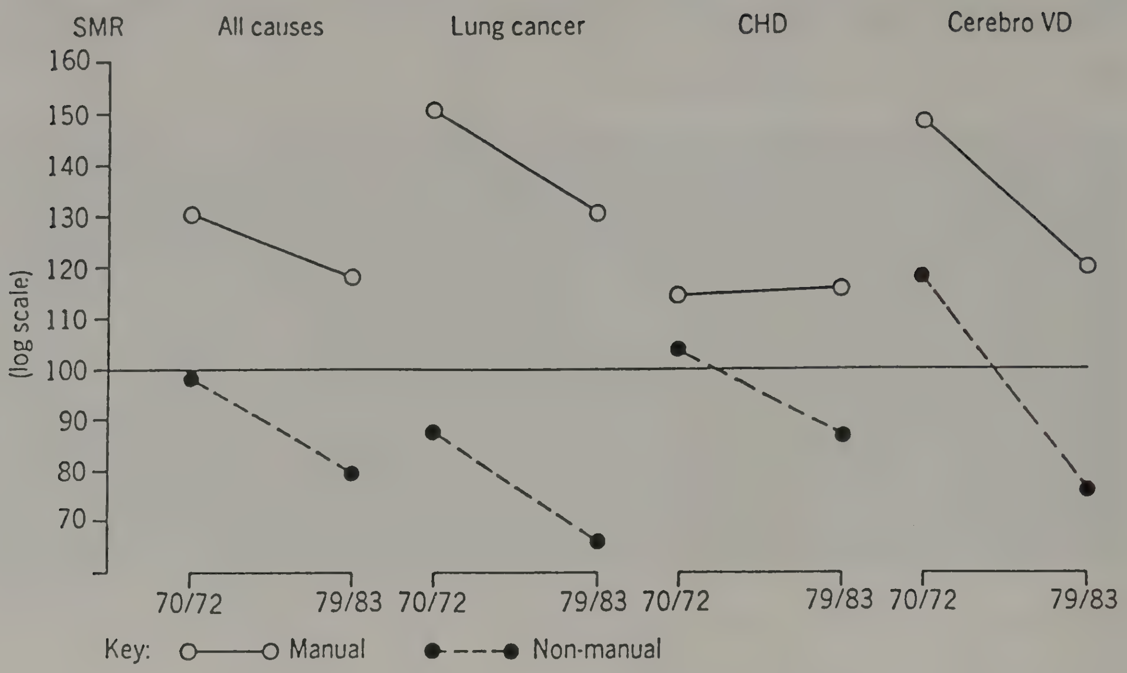
Social class (based on occupation) in 1971		1976-81	1982-85	1986-89
I	Professional	69 (50-81)	61 (49-75)	67 (54-83)
II	Managerial	78 (73-84)	78 (71-86)	80 (72-89)
IIIN	Skilled, non-manual	103 (95-113)	98 (86-110)	85 (74-97)
IIIM	Skilled, manual	95 (91-100)	101 (95-107)	102 (96-109)
IV	Partly skilled	109 (102-116)	113 (103-123)	112 (102-123)
V	Unskilled	124 (113-137)	136 (119-155)	153 (134-175)

SMRs calculated from a 1% sample follwed prospectively from 1971. 95% confidence intervals in brackets.

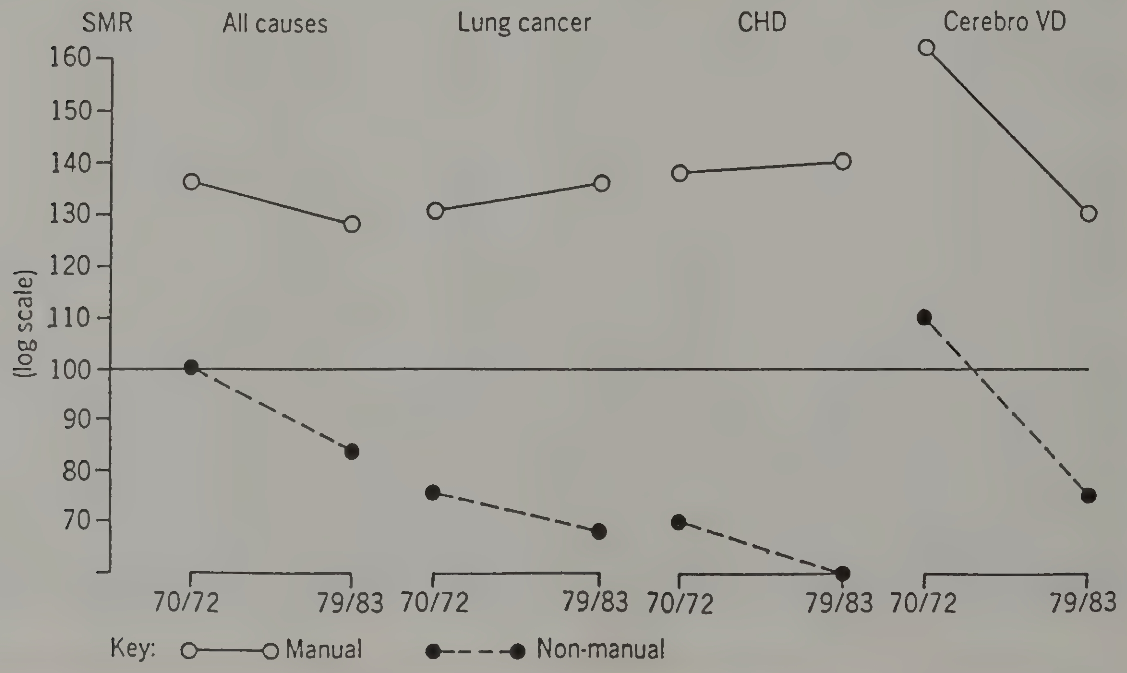
1. A standardised mortality ratio is used to compare the mortality of a particular sub-group of the population relative to a standard, adjusting for differences in population age structures. It is calculated by applying the age-sex specific rates from the standard population to the sub-group to obtain the 'expected' number of deaths and comparing the actual number of deaths in the latter with the expected number. Where different standards are used for different periods (as in the above tables) it is only possible to show changes in relative differences over time, not changes in absolute differences or absolute values. If standardisation has been carried out using a single standard (as in Figure 2.3) it is possible to infer both absolute and relative changes.

2. The Decennial Supplement for 1979-83 records a very high SMR for social class V. The social class V figure may be artificially raised as a result of re-classification of occupation and numerator-denominator biases.

a. *Men aged 20-64*



b. *Married women aged 20-54, classified by husband's occupation*



Standardised mortality ratios* for select causes of death in Great Britain 1970-72 and 1979-83 for manual and non-manual groups.
* *For each cause the SMR in 1979-83 is 100 for each sex.*

Marmot MG, McDowall ME. Mortality decline and widening social inequalities.
Lancet Vol 2, 8501, 274-276, 1986

Males/females ratios (England and Wales)

Age	1950-54	1955-59	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-93*
25-44	1.26	1.34	1.41	1.45	1.50	1.50	1.56	1.60	1.74
45-64	1.71	1.80	1.88	1.90	1.85	1.80	1.75	1.68	1.64
65-74	1.62	1.73	1.80	1.89	1.93	1.93	1.89	1.81	1.75

* 1990-93 figures are provisional

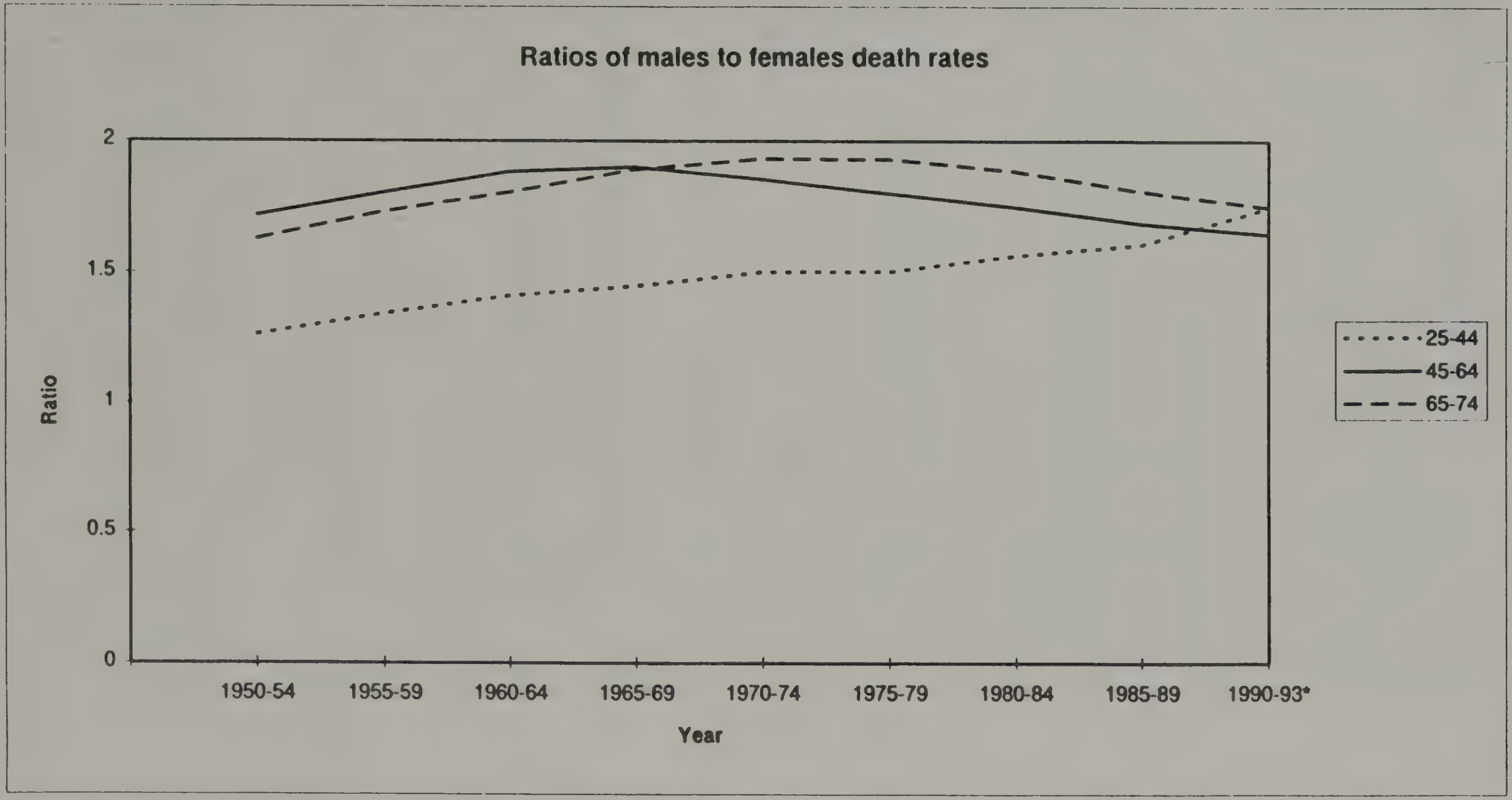


Figure 2.7

CHAPTER 3: THE IMPORTANCE OF TACKLING VARIATIONS IN HEALTH STATUS

The Potential for Gains in Health

3.1 The 74th Annual Report of the Registrar General for 1911 contained a table of infant mortality by father's occupational class. The RG commented;

> "Much may be learnt from this table as to the extent to which infant mortality can be regarded as preventable. For instance the middle class mortality was only 61% of the total legitimate infant mortality of the country. This at once suggests that at least 40% of the present infant mortality in this country could be avoided if the health conditions of infant life in general could be approximated to those met with in class 1."

(74th annual report of the RG for England and Wales,pxii)

3.2 Similar reasoning applies today, as was recognised when in 1984, the 32 Member States of the World Health Organisation (WHO) unanimously adopted 38 regional targets for health by the year 2000. The first of these targets stated that:

> "By the year 2000 the actual differences in health status between countries and between groups within countries should be reduced by at least 25%, by improving the health of disadvantaged nations and groups."

(WHO: Targets for Health for All; WHO Regional Office for Europe, Copenhagen, 1985)

3.3 What might be achieved can be illustrated by the consistent improvements in life expectancy over the last century, and the current good health and long life expectancy of the most advantaged social groups. These give us an indication of how much ill health and premature death is potentially preventable. If middle class people in the South East of England can have long and healthy lives, there would seem to be no biological reasons why less advantaged people in the North West of England cannot enjoy similarly long and healthy lives. The fact that, although still lower than women's, men's life expectancy now well exceeds that of women in the middle of the century - and is still increasing - suggests that further extensions of men's life expectancy are possible.

3.4 It has been calculated that if the whole population had experienced the same death rates as the non manual groups there would have been 700 fewer stillbirths and 1500 fewer deaths in the first year of life in 1988, 750 fewer deaths in children in England and Wales in 1981, and 17,000 fewer deaths in men aged 20-64 in Great Britain in 1981.[29] This indicates the extent of the burden of premature mortality created by social class variations in mortality. The burdens of mental and physical ill health and disability among less advantaged groups have not been quantified in the same way but are considerable. These burdens affect all levels of society: families, communities, industry, the economy, the tax system, and health and welfare services.

Achieving Health of the Nation Targets

3.5 The WHO has remarked that reducing the burden of health problems in disadvantaged groups offers great potential for improving the average health status of the population as a whole.

3.6 An essential criterion in the Health of the Nation for selecting candidates for key area status was that the area should be a major cause of premature death or avoidable ill health. Within all the key areas in the Health of the Nation White Paper there are variations in health status between different groups (see Annex C) . Within each key area, the experience of the currently most healthy group suggests what it is possible to achieve. An important way of achieving the Health of the Nation targets is by bringing up the health experience of those in the least healthy groups closer to that of the currently most healthy groups: for example, by reducing men's suicide rate to that of women; by lowering the CHD risk of people from the Indian subcontinent to that of the total England and Wales population; and by reducing deaths from accidents among children in social class V to the rates among social class 1 children. Indeed, without specific attention, variations in health may prove a potentially serious barrier to the achievement of the Health of the Nation targets[30]

The Weaknesses of Arguments Against Intervention

3.7 Several arguments have been put forward against the principles of trying to reduce variations in health status.

A Matter of Biology

3.8 One objection is that health differences are biologically based (especially for sex and ethnicity) and that there is neither any inequity inherent in the observed variations nor is there anything the NHS can appropriately do about them. Chapter 2 has explained, however, that even where there are genetically based predispositions, these interact with behaviours and environment and are not fixed in their expression.

---

[29] Delamothe T, Social Inequalities in Health, BMJ, 303, 1046-50

[30] Marmot MG. Social differences in health within and between countries. Daedalus 1994;**123**:197-216

All That Matters is Economic Prosperity

3.9 Improvements in national prosperity can clearly have a beneficial effect if they result in improved national living standards and looking at trends over time, it is certainly the case that greater overall prosperity has been associated with significant health gains at all levels of society. However, it has been observed in several countries that rising standards of living can co-exist with increasing socio-economic differentials, suggesting that increasing prosperity alone will not necessarily reduce differentials in health.

3.10 Some commentators have argued that once certain basic standards of living are met, and gross absolute poverty abolished, then social variations in health will disappear or be attributable solely to behavioural factors[31]. However, there are data from several advanced industrialised societies including the UK, that socio-economic gradients in health are linear, each increment in social conditions being associated with an incremental improvement in health. Thus there is not a 'threshold' effect of wealth on health at a certain level, but the potential for continuing further improvements[32].

Sick People May Become Poor

3.11 It is sometimes argued that social class variations in particular result from the tendency of sick people to become poor rather than vice versa., again implying neither an inequity nor a solvable problem. As shown in the previous chapter, this sort of social mobility cannot alone account for the social class gradient in health and premature death. The OPCS Longitudinal Study shows social class differences in health (Figure 2.5) which can not be explained by social mobility, since the study is a long-term follow up of the same group of individuals, categorised by their social class at the start of the study. In those cases in which poor health or disability does predispose to unemployment or poverty, steps could still be taken to mitigate the social effects of ill health, and to protect against any further worsening of health due to the social circumstances in which ill or disabled people find themselves.

---

[31] Le Fanu J; The Phantom Carnage: The Myth That Low Income Kills; Social Affairs Unit, London, 1993

[32] Marmot MG, Shipley MJ, Rose G. Inequalities in death - specific explanations of a general pattern. Lancet; 1984;**1**:1003-6; Pappas G, Hadden W, Fisher G. The increasing disparity between socioeconomic groups in the United States, 1960 and 1986, New England Journal of Medicine; 329, 103-109, 1993

A Matter of Lifestyle and Personal Choice

3.12 A further objection is that social variations in health result from freely chosen health damaging behaviours and that it is not appropriate or possible for the NHS to intervene to alter these other than to make sure that people are making choices in possession of information about their consequences. As noted earlier, behaviours such as diet, exercise, smoking and alcohol do not fully account for social variations in health or premature death, so it remains important to address the other determinants of social variations. They do however contribute to ill health and premature death, and it is therefore important to continue to try to reduce the prevalence of health damaging behaviours, recognising that personal, social and economic circumstances may affect the ability of some groups to modify their behaviours.

Variations Between Individuals Are Reducing

3.13 Some commentators draw attention to the fact that this century, the variation between individuals at the age of death has been reducing. Why then the preoccupation with groups? In fact, the reduction in the variation between individuals is an inevitable consequence of the decline in infant mortality and death from infectious diseases. There remain continuing or increasing variations between men and women, different regions, socio-economic groups, and ethnic groups; and these continuing variations are a prime cause for concern.

Conclusions

3.14 There are powerful arguments for taking action to reduce variations in health. Everybody should have the opportunity to attain their full potential for health. Variations indicate the extent of potentially preventable ill-health and premature death, and in those groups which suffer the worst health, there are the greatest potential gains to be made. An important way of achieving the Health of the Nation targets is by improving the health of the least healthy groups closer to the levels attained by the most healthy groups.

3.15 It has sometimes been argued either that action to tackle variations is futile - because they result from factors over which we have no influence or from freely chosen behaviour - or alternatively, that general economic arguments are founded largely on misunderstandings of the causes of variations, or fail to acknowledge that improved prosperity alone will not in itself reduce differentials in health.

CHAPTER 4: THE ROLE OF THE NHS AND THE DEPARTMENT OF HEALTH

Setting in Context the Role of the Department of Health and the NHS

4.1 The diagram at figure 4.1[33] is an illustration of the possible interrelationships between material, behavioural and psychosocial influences on health, and of the national, local and individual levels at which these influences may operate. It emphasises interactions between these different levels; for example, the way in which individual lifestyles are embedded in social and community networks and in living and working conditions, which are themselves related to the broader social, cultural and economic environment.

4.2 Much of the improvement in health seen over the last century is the result of improved environmental and social conditions and rising standards of living, that is, to factors in the outer ring of the diagram having an impact on living and working conditions: improved water supplies and sewerage; safer and healthier housing with better amenities, in less crowded neighbourhoods; less air pollution; shorter working hours and better conditions at work; cheaper and more nutritious food more widely available in all regions of the country; financial protection for the sick or unemployed; freely available and compulsory education. New treatments (e.g. antibiotics) and preventive techniques (e.g. universal vaccination and immunisation) have also contributed to improving health by reducing mortality and morbidity from infectious diseases.

4.3 Although there has been a continuous improvement in life expectancy and the overall health of the population, variations in life expectancy and health between social groups remain. This suggests that different social groups have benefited differentially from changes in these determinants of health. An important issue for research and policy is the relative importance of the different factors in this diagram (or of interactions between them) for the production of social variations in health, and the extent to which intervention at these different levels will be effective in reducing social variations.

4.4 The Department of Health has a wider sphere of influence than a first glance at this diagram might suggest. The provision of health services, in the second outer ring of this diagram, is the most obvious responsibility of the Department and the NHS. However the Department also has a role to play (both individually and through working alliances) in social services, health education, health promotion, health and safety at work, and screening and preventive medicine. This is more easily seen in the diagram below, derived from a model proposed by Feinstein.

---

[33] From Dahlgren, G. and Whitehead, M. (1991) 'Policies and strategies to promote social equity in health'. Stockholm, Institute for Futures Studies.

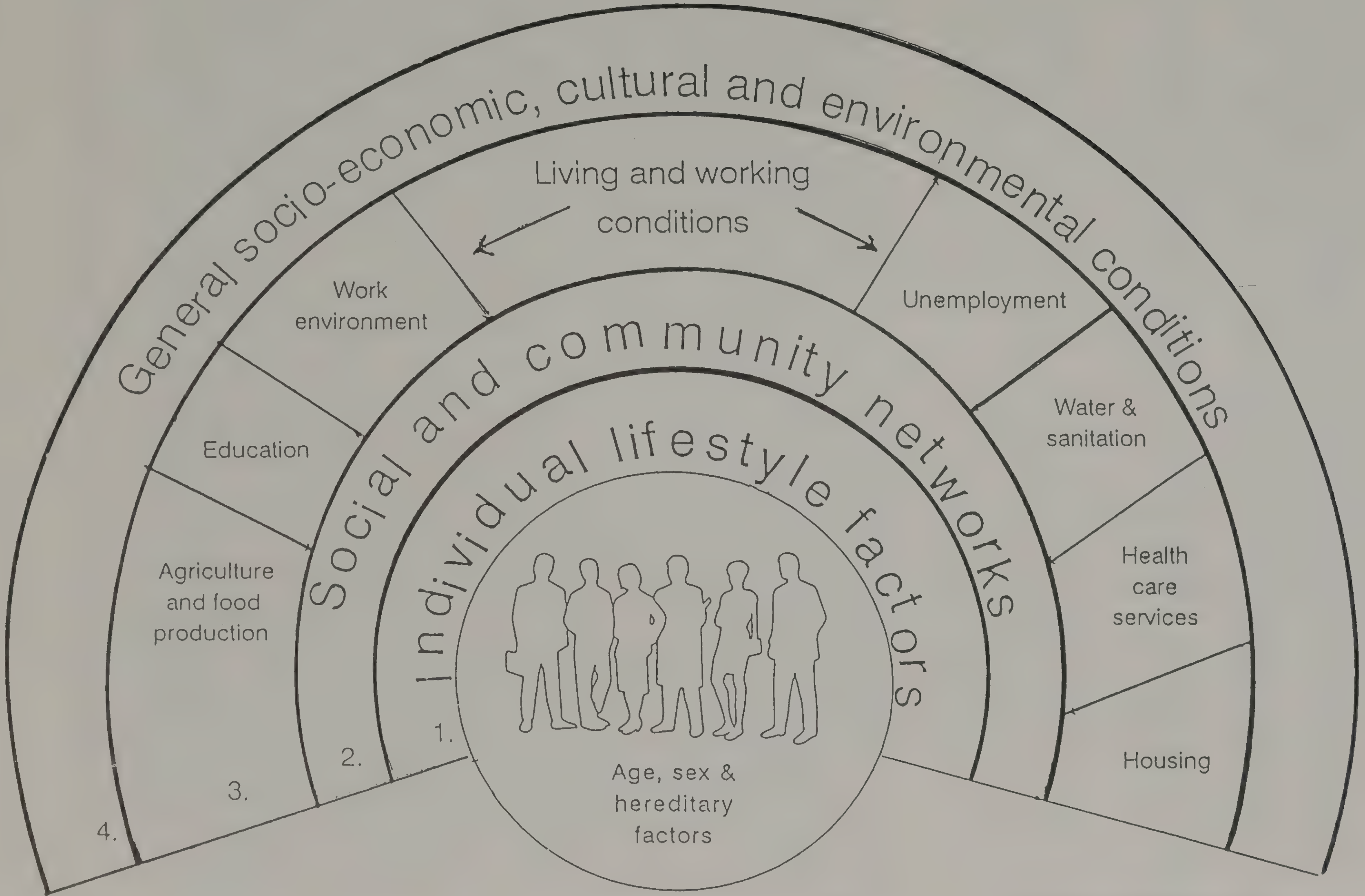
EXPLANATION	**BASIS OF INEQUALITY**	
	EXPOSURE AND EXPERIENCE OVER LIFESPAN	**HEALTHCARE ACCESS**
MATERIALISTIC	Housing Wealth Transport Overcrowding Sanitation Occupation Environment	Regular GP Financial limitations
BEHAVIOURAL	Diet Smoking Exercise Leisure Risk taking Substance Misuse	Comprehensive information Knowledge of system Following instructions Self-diagnosis Awareness

4.5 This diagram is based on a cross-classification of two dimensions, one relating to the characteristics of persons or households that may cause differences in health status (divided into materialist or resource-dependent characteristics such as wealth and home ownership, and non resource-dependent behavioural characteristics including psychological, genetic and cultural factors); and the other referring to the stage of the lifespan at which variations are generated (divided into different exposures and experiences over the life span, and differences in access to and use of health care). Three of the four boxes thus generated come under the remit of the Department of Health and the NHS (both ‘healthcare’ boxes, and health education/promotion in relation to behaviours).

4.6 The exposures and experiences related to living and working conditions across the lifespan (housing, transport etc.) extend outside the health sphere. Although they are outside the direct control of the DH and NHS they could be the focus of local alliances, for example with housing organisations or with professionals working in public health, and in these local alliances the DH and NHS might be seen as having a particular role to play in drawing attention to the impact of any such intersectoral actions not only on health in general, but also on social variations in health.

Figure 4.1

The Main Determinants of Health


General socio-economic, cultural and environmental conditions
Living and working conditions
Work environment
Education
Agriculture and food production
Unemployment
Water & sanitation
Health care services
Housing
Social and community networks
Individual lifestyle factors
Age, sex & hereditary factors
1.
2.
3.
4.

Source: Dahlgren & Whitehead, 1991.

THE ROLE OF THE NHS

4.7 To find out what was currently being done at a local level to address variations in health, we conducted a survey of NHS Public Health Departments across the country. A large number of replies were received which show a rich variety of work. This ranges from action directly set up to improve the position of groups with worse health, to work where this was an indirect result of other objectives.

4.8 A review of the replies indicated a number of key areas where local action is both possible and desirable:

- health needs assessment
- local targets
- access to effective health care services
- alliances
- resource allocation
- purchasing by primary health care services
- public health programmes
- the NHS as employer

4.9 What follows is a discussion of the potential role of the NHS in each of these areas, together with illustrations of local action drawn from the responses to our survey. These illustrations are just that - illustrative of some of the current practice within the NHS. They are not presented as best practice nor as a set of fully evaluated interventions.

Health Needs Assessment

4.10 For action to be taken, health variations must be identified locally as well as nationally. The commissioning role already focuses health authorities' attention more closely than before on the characteristics and needs of local populations. The assessment of health needs should explicitly include the identification and dissemination of information about differences in health status between different population groups. The publication of Annual Health Reports offers an important opportunity for making available up-to-date information about variations in health at local level, and reports are one instrument for the effective advocacy of public health policies.

4.11 Most of the skills required for this type of analysis are available within public health departments. This expertise needs also to be available to GP purchasers to allow them to examine the needs and characteristics of their practice populations. It is important to ensure that the methodologies used for analysis are scientifically sound, particularly when numbers are small.

4.12 In order to gain a better understanding of the relative influence of different determinants on health and hence the scope for intervention, a number of methods can be adopted to build up a more comprehensive picture of health needs:

- geographical mapping of routine mortality and hospital utilisation data, using small area statistics techniques and trend analysis;
- quantitative methods of "current" data collection, eg special surveys;
- use of qualitative research methods such as focus groups, "rapid appraisal", anthropological studies, and community development approaches;
- gathering intelligence about the needs of particular individuals, groups or communities from health professionals.

4.13 Health needs assessment is not simply a scientific and technical process, but a social process of involving local stakeholders (local people, GPs, Community Health Councils, voluntary organisations, Social Services Departments) and trying to reconcile different views. The aim is that services should match health and disease needs, local circumstances, and expectations of the resident population.

Geographical mapping of health needs

The Annual Health Report of the Director of Public Health, Chester Health Authority uses the underprivileged Area (UPA) Score or Jarman index to create four zones coloured to describe relative health need between 45 electoral wards for Chester City, Ellesmere Port and Neston. The available health information is structured in relation to seven health improvement programmes and utilisation of hospital (age standardised admission ratios).

Contact: South Cheshire Health 01244 364 464

North Derbyshire HA has conducted a survey of the health needs of people living in pit communities, completed with the help of the estates action committees.

Contact: North Derbyshire Health 01246 231 255

Behavioural surveillance and trend analysis

Birmingham: Healthy Birmingham 2000 produces a regular bulletin on health surveillance by electoral ward and conducts a rolling survey of health and life-style amongst adults and young people - the "Pulse" of Birmingham. More recently it has undertaken a comparative analysis of the sensitivity of such measures as life expectancy; SMRs and % persons dying under the age of 65 years in relation to changes over time in health status between Parliamentary constituencies.

Contact: North Birmingham or South Birmingham HA

Northumberland HA has undertaken a survey of nearly all the schools in their area (years 9 and 10) to map the behaviour of 13-16 year olds and establish a basis for targeted education programmes.

Contact: Northumberland Health 01670 514 331

A health visitor observed that 40% of all attendances by under 5s within the North Staffordshire boundaries were for head injuries. These findings were presented to the District Child Accident Prevention Group which took action.

Contact: HIV/A&E Liaison Officer 01782 45452

Use of qualitative research methods

The Waterfront Health Action Project adopted a two-stage research design based on a combination of lay epidemiology, community development approaches and action-oriented approaches to identify local health needs. Volunteer interviewers were recruited from the local community to talk to key people in the local community about their perceptions of major health concerns.

Salford HA, FHSA and Social Services Department used a combination of methods - epidemiological, professional and lay to identify the needs of elderly people for mental health services, leading to a change in service.

Contact: Salford and Trafford Health 0161 787 0125

Local Population Involvement

Croydon Health Commissioning Agency and Croydon Council established two Health Think Tanks to identify reasons for poor health in three electoral wards. The members of the Think Tank were people who had special knowledge of the area. Interviews were held with local people and an extensive public consultation exercise was held to draw up proposals for intervention.

Contact: Croydon Health Commissioning Agency 0181 401 3951

Ethnic minorities

North Derbyshire has surveyed the needs of the Muslim and Travellers communities, identified a wide range of problems and produced clear recommendations for action.

Contact: North Derbyshire Health 01246 231 255

Camden and Islington have undertaken a needs assessment of black and ethnic minority people and refugees in their area. Their report is based on a review of the literature as well as local studies and consist of five sections - a demographic profile, health and lifestyle health care provision, and recommendations for action.

Contact: Camden and Islington HA 0171 383 4888

Local Targets

4.14 Specific targets for improvement can be set where particular problems exist in particular localities or groups. The NHS Executive produced a discussion document, "Health of the Nation: Local Target Setting" which suggests some approaches to local target setting and the West Midlands Regional Health Authority, among others, has set different targets for a number of health authorities in respect of Health of the Nation targets, giving an indication of what can be done. For this approach to progress below health authority level, and to work at GP practice level, there is again a need for research and support on the methodologies to be used.

4.15 Targets can be set to improve the health experience of certain groups, both in absolute terms and relative to a wider population. This means that targets might address variations in health:

- between districts and the regional or national average, or
- within districts by geography, practice population, gender, age or ethnic groups;
- between and within general practices.

4.16 Targets can be set in terms of:

Outcomes

- preventing measures of social deprivation from widening (as part of a wider health strategy working in alliance with other agencies);

- reducing differences in the prevalence of damaging life-styles such as smoking between groups or settings;

- improving or reversing trends in age standardised mortality rates by age or geographical unit;

- reducing risk adjusted post-operative mortality rates for certain conditions between hospitals.

Impact Indicators

- minimum standards for uptake of preventive health care;

- availability and use of targeted services (eg translated leaflets);

- access to hospital for specific procedures (eg hip replacement operations) in-patient or out-patient care.

Input Indicators

- availability and provision of health care resources, especially skilled staff, in relation to need (eg. wte/1000 "needs" weighted population).

4.17 Of particular importance in setting targets and assessing progress towards these, is the size and stability of the population denominator, and the sensitivity of the measures to change over time. SMRs (all causes) are probably the most sensitive measures of relative improvement in health status in relation to population size over a 5-10 year time span, although not particularly stable for a population denominator of less than 75,000 and therefore not suitable for use at the level of individual practices. General practice populations need to be measured against the prevalence of preventable morbidity and associated risk factors.

Access to Effective Health Care Services

4.18 It is probably the case that access to health services plays a much greater part in ameliorating the effects of health variations than in preventing or reducing them. Regardless of their contribution to variations however, it is clearly the case that in a health service which takes seriously the principle of equity of access, effective services should be accessible to those who need them most. Equitable funding according to the relative needs of different areas will not on its own achieve this end.

4.19 The evidence concerning access to services by different groups is mixed, with some studies showing a lower use of services among disadvantaged groups relative to a given level of morbidity and others disputing this finding. The evidence is clearer in relation to preventive programmes, where studies have shown lower uptake of immunisation and screening among poorer social and economic groups.

4.20 Different population groups may face particular barriers in accessing services for a variety of reasons, for example: a lack of affordable transport; a service which is off-putting because it is culturally, or otherwise insensitive to the needs of users; language difficulties; ignorance about the availability of services; poor communications between professionals and users; a service which is geographically inaccessible or open only at inconvenient times.

4.21 The NHS has a responsibility to ensure that clinical care of proven cost-effectiveness is reaching all those who need it, particularly ensuring that assessments of population need take into account and fully represent the groups at risk of being less well served. NHS bodies should also check that practical arrangements for access to services, particularly for groups which show variations in health status.

4.22 Ways of making effective NHS healthcare services more accessible to all groups include:

- NHS providers to ensure that standards of care do not lag behind the best possible, thereby adversely affecting particular groups, e.g. by improving outcomes for breast cancer patients by implementing recommendations of the Expert Advisory Group on Cancer;

- ensuring equity of waiting times for elective hospital care and treatment;

- identifying, via local studies, the barriers to cost-effective clinical care for particularly disadvantaged groups;

- making services more attuned to the needs of users through user involvement in service reviews;

- providing special services and treatment to meet special needs, e.g. sickle cell anaemia;

- taking services to users through the availability of domiciliary and outreach services, e.g. through the appointment of Health Visitors, or link workers with elderly, adolescent, or other minority populations; translation of health advice and literature on service availability;

- facilitating access through community transport schemes;

- ensuring appropriate packages of community care and discharge arrangements for materially disadvantaged patients;

- giving access to preventive health care and health education for those in long-term care.

Nottingham HA organised a Conference on "Advocacy for Older People": topics included acute care, mental health, citizen advocacy and the first 11 months.

Contact: Nottingham Health 0115 969 1691

Buckinghamshire have undertaken interviews with ethnic minority patients before and after contact with the health care sector and found out their views and experiences about the services that they received.

Contact: Buckinghamshire Health Board 01296 310000

North Cheshire is using a profile of smoking drawn up from a health and lifestyle survey to target provision of Nicotine Replacement Therapy through GP practices. Evaluation under way.

Contact: North Cheshire Health 01928 593 000

Northamptonshire's Right Angle Project provides a community transport scheme to enable people from isolated areas to have access to health care.

Contact: Northamptonshire Health Authority 01604 615 219

Sunderland Health Commission is funding a health visitor to work with a small Bangladeshi community and a nurse practitioner to work with deprived communities.

Contact: Sunderland Health Commission 0191 565 6256

Northumberland has prepared a charter for people with mental health problems and learning disabilities to enable them to understand their rights and how to give their views on the services they receive. Currently being evaluated.

Contact: Northumberland Health 01670 514331

Essex FHSA is assessing how to provide pharmaceutical services to a population of mentally and physically frail, elderly house-bound patients.

Contact: Essex FHSA

North Derbyshire HA has undertaken an audit of variations in CABG rates by small area population.

Contact: North Derbyshire Health 01246 231 255

Salford and Trafford Health is developing eye care services in response to the different needs they identified within their communities. This reconfiguration of services will result in more locally accessible community-based eye clinics and disinvestment in the centralised major ophthalmology hospital sites. The elderly and visually disabled will particularly benefit from this strategy.

Contact: Salford and Trafford Health 0161 787 0125

Strategic Alliances to Address Variations in Health

4.23 Both the Health of the Nation White Paper and "Purchasing - a framework for action" highlight the importance of forming healthy alliances with other agencies. Local strategies to address variations in health must involve a wide range of organisations, particularly local authorities, the voluntary sector and commerce. The five-year strategic and resource frameworks developed by practices, provide the opportunity to set out clearly local priorities for reducing variations in health and indicate their joint investment in public health programmes with other agencies.

Sandwell HA has established a Community Enterprise group as part of the City Challenge

Contact: Sandwell HA

Coventry City Council and local health authorities have been working together to improve the level of health in a local housing estate with high rates of unemployment, single-parent families, crime and accidents, and where residents have a lower life expectancy than in other areas of the city. Peer educators play a significant part, and local traders are involved.

Contact: Coventry Health 01203 844 031

Liverpool HA and Local Authority have launched a joint five-year City wide health strategy which places poverty, unemployment and housing at the centre of its policy objectives. A new arm of the Joint Public Health Team and five Task Groups have been set up as part of its Joint Consultative Committee to take forward consultation, user involvement and secure multi-agency commitment to the plan.

Contact: Liverpool Healthy City 2000, PO Box 88, Liverpool l69 2DH

Exeter and North Devon Health Commission has produced an "Action for Health" action plan in partnership with about 60 other agencies. Each section of the plan identifies a project, the project's objectives, and which partner is responsible for taking action by major setting and each HON key area. This approach distils a broad inter-agency strategy into discrete projects with clarity about lead responsibilities for taking action; it also provides a framework for annual monitoring of implementation.

Contact: Exeter and North Devon Health Commission 01392 411 222

The 'Set in Rural Isolation' project was established in 1992 by the National Farmers' Union, the Community Council of Shropshire, the Shropshire Centre for Health Promotion, the Samaritans, Confide, and the Citizen's Advice Bureau. Farmers and others living in isolated communities have been given information about where to get help and support in times of stress.

Contact: Shropshire HA

Northumberland HA has adopted equity as one of its major themes for effective purchasing. It is working with social services to address variations in need for community care services, adopting a joint budgeting approach to differential investment in services for the physically disabled, mental illness and children with special needs.

Contact: Northumberland Health 01670 514 331

Resource Allocation

4.24 Allocations to district health authorities for hospital and community health services (around 60% of NHS expenditure) are informed by a weighted capitation formula which reflects the relative need for health services of district populations. Ultimately, it is intended that each district should receive its 'fair share' of funds as calculated by the formula, but it will take some time to move all districts to that point from their historical funding base. The level of funding for family health services (22% of NHS expenditure) is unrelated to that for hospital and community services and district health authorities have very few powers of discretion over its application, except in a few areas such as GP additional practice staff. Funding for social services is, again, unrelated to health service funding and is based on the Standard Spending Assessment together with a transitional ringfenced allocation for community care.

4.25 We have not considered the strengths and weaknesses of the resource allocation system to districts, but would draw attention to the importance of continuing the principle of funding according to relative need at a sub-district level. With the merger of FHSAs/DHAs into health commissions responsible for larger populations (average size 500-700,000) and the growth of primary care based purchasing, the introduction of equitable policies for resource allocation at a sub-district level, for public health programmes and purchasing of health care by GP Fundholders and HAs, becomes increasingly important.

Ealing, Hammersmith and Hounslow HA is buying services from its mental health trusts using mental health related census data to help calculate the level of funding.

Contact: Ealing, Hammersmith and Hounslow HA

North and Mid Hampshire Health Commission has developed a formula which allows the calculation of an indicative level of Practice staff reimbursement for each GP Practice. This formula uses a number of variables which include the number of surgeries, the hours of opening, the Practice list size weighted for age and sex, and the annual turnover on the list.

Contact: North and Mid Hampshire Health Commission 01256 312223

Buckinghamshire Health Board is developing an approach to Practice staff resource allocation based on weighted capitation. The principles on which it is based are equal reimbursement of equal workload; staff workload factors assumed to be similar to GPs' workload; flexibility to reflect practice individuality. Factors included in model assumed to most affect PHC workload are age and sex, economies of scale and multi-site, social deprivation, ethnicity, new registrations, growth in list sizes. Annual reviews of allocations are proposed.

Contact: Buckinghamshire Health Board 01296 310093

Similarly, Avon and South Essex HAs are developing approaches for targeting resources to general practices.

Purchasing by Primary Care Teams

4.26 Primary care teams provide general medical services and, increasingly, purchase and commission secondary care services. Practices can consider a range of methods to address local variations in health:

- health needs assessments using practice and local data, rapid appraisal and patient surveys;
- patient participation, especially among disadvantaged groups;
- definition and auditing of standards of care which should reduce variations (eg availability of translators, attendance rates for well women clinics);
- an effective quality assurance programme which includes patient satisfaction, significant event auditing, interface and interpractice auditing and measurements of effectiveness and outcomes;
- a commissioning strategy based on all the above elements which includes commissioning of secondary care, provision and development of primary care and the delivery of services in settings which are most likely to address variations in health.

Public Health Programmes

4.27 Health authorities have invested in interventions aimed both at helping individuals directly and at strengthening social support within communities (levels 3 and 4 at fig. 4.1)

4.28 A range of interventions are possible in this context including such measures as:

- community participation in forums, groups and drop-in centres;
- health information, advice and counselling services;
- community transport, "Dial a ride", and passport for leisure schemes;
- the provision of welfare benefits advice within primary care services;
- social support through lay "befriending" schemes;
- the use of media and other communication channels;
- service specifications for inter-agency work by NHS health promotion units;
- targeted support for health promotion in schools, workplaces and other settings;
- multi-setting community based health promotion for particular topics, eg heart health, teenage pregnancies.

4.29 All too frequently, public health programmes are time-limited, funded from non-recurring sources, and marginal to mainstream health authority activity. What is now required, given 20 years of experience of trying out projects on a small scale, and some evidence of effectiveness, is a policy commitment to adopting these methods through allocation of mainstream resources, and planned changes to professional practice and training of NHS staff to work effectively with more disadvantaged populations.

4.30 Responses to the survey, and work previously done by the Health Education Authority, have suggested that effective interventions with disadvantaged individuals are thought to be characterised by the following features:

- building self-confidence and self-esteem through experiential learning;

- understanding people's beliefs, the context and opportunities for change;

- offering practical support which is realistic and feasible;

- helping people to define for themselves what changes they would like to make and enabling them to gain access to information and advice about how to make these changes;

- promoting a positive and holistic view of health,

- providing opportunities for social integration through events, groups, informal contacts;

- acting as advocates on behalf of particular individuals or communities when appropriate;

- facilitating access to a variety of services and benefits.

4.31 Methods which are considered to be particularly ineffective include those which:

- are "victim blaming", i.e. where other people imply that particular behaviour or need demonstrates weakness;

- reinforce fatalism and sense of despair;

- raise expectations that something may happen when authorities have no intention of doing anything - surveys of disadvantaged people may be unethical and breed profound cynicism;

- leave behind no locally sustainable infrastructure, resources or capability for community action in the longer term;

- offer a one-dimensional response to multiple health needs;

- lead to isolation or exclusion of the individual from their natural community.

Public Health Programmes

Healthy Birmingham 2000 was established by the City of Birmingham, together with local health authorities to address inequalities in health and HON targets. Community development workers have been appointed to encourage multi-cultural community participation and health promotion in five Health Action Areas. Projects include lay support for teenage mothers; practical demonstrations of healthy cooking by local residents; provision of advice and information on fuel saving and fuel debts joint with the voluntary sector; a women's health forum for non-English speaking women based at local community centres; and a community safety health help project for elderly and disabled residents.

Contact: North Birmingham or South Birmingham HA

A group of health visitors in Croydon were concerned about the inadequate diets of many young mothers and their children in areas with a high proportion of low income families. Families were invited to participate in a series of sessions designed to improve nutrition. Results show improved dietary habits and an improvement in mothers' self-esteem and willingness to change.

Contact: Croydon Health 0181 401 3951

Nottingham Health has commissioned a number of projects to address the needs of families and children living in the inner city; the consequences of unemployment on a mining community and black and ethnic minority populations. Some of these projects have been developed by a health advisory group working for the City Challenge area. Projects include:

a. linking six inner city local primary schools with four GP practices to provide health education and community rooms and develop the concept of health-promoting schools, through a network of parents, teachers, nursery nurses, school nurses, primary care staff and health promotion officers ("HEALS" project).

b. appointment of lay health workers to become trained and then improve access to welfare health and social services by inner city residents; support to these workers given by health professionals. Scheme will be evaluated.

c. a joint initiative between the Health Promotion Department, the Department of Public Health and the University of Nottingham to address the health and welfare needs of unemployed miners and their families - the "Ashfield Health" Linkwork Project. Interventions include a group support Newpin type of scheme for young mothers; network of consumer advice and counselling; use of health visitor profiles to target families in greatest need; and sensitising primary and community health services to the health effects of redundancy, unemployment and low income, and appropriate responses.

Contact: Nottingham Health 0115 969 1691

Northumberland HA is investing in a SHAYP (sexual health in young people) project to address variations in teenage pregnancies in two schools where problem is greatest. Involves developing a package of interventions with support from midwives, health visitors, GPs and voluntary organisations.

In order to support this type of work by NHS HP units, there have been changes to the way in which service specifications have been written and contracts agreed. Nottingham, Manchester and South Birmingham HAs have well-developed service specifications for health promotion which both reflects Health of the Nation targets and variations in health.

South Birmingham Health Promotion Unit has introduced a management information tool for assessing resource input into different types of community development/health promotion activities.

Contact: South Birmingham HA

Nottingham Health has separate contracts with community radio stations to support its health promotion programme.

Contact: Nottingham Health 0115 969 1691

Health At Work in the NHS

4.32 As the biggest employer in the country, the NHS has a particular responsibility to promote health through its own employment practices. These might include:

- equal opportunities policies - targets for recruitment so staff profile more representative of populations served;
- job creation schemes and work experience for unemployed individuals, people from areas of social and economic deprivation;
- provision of child care and nursery provision for all grades of staff including those working in contracted-out services; subsidised provision for part-time/low paid NHS workers;
- subsidised leisure and recreation facilities for NHS employees/NHS contracted agencies, especially part-time low paid workers;
- recognising and rewarding local voluntary/community work by staff (including managerial and professional staff) in job selection and performance review;
- staff counselling for retirement; redundancy and other major life events, eg bereavement;
- targeted occupational health screening services.

THE ROLE OF THE DEPARTMENT OF HEALTH

4.33 A review of activity currently undertaken by the Department of Health (including the NHS Executive) indicates a number of areas where it has a significant role - either in practice, or potentially - in addressing variations in health. They include:

- taking a lead across government;
- promoting equitable access to health services;
- setting targets and providing an information framework;
- commissioning research;
- targeting activity;
- providing national support for local action;
- setting priorities for health authorities and managing performance;
- participating in international health fora;
- support to the voluntary sector.

Taking a Lead Across Government

4.34 The Department of Health has an explicit role in taking the lead across government on matters affecting the health of the population. The Chief Medical Officer, although located in the Department of Health, is Chief Medical Officer to the government as a whole. The very existence of the Health of the Nation strategy - which was, incidentally, recommended by Sir Douglas Black in his seminal report on health inequality back in 1980 - is an encouraging step in focusing attention across government on the health status of different population groups. Although Health of the Nation is a Government-wide strategy, it is natural that the Department of Health should have the role of coordinating the strategy, and providing leadership and momentum. Two aspects of this role are particularly important in respect of tackling variations:

Assessing the Health Impact of Government Policies

4.35 One of the most welcome features of the Health of the Nation strategy is its recognition that, to quote from the White Paper, "many policies have, to a greater or lesser degree, an impact on health. It is important, therefore, that as policy is developed the consequences for health are assessed and, where appropriate, taken into account". The Department has a clear role in helping other Departments take account of the health impact of their policies, which would include addressing the issue of health variations where policies might disproportionately affect the health of a particular group. For example, the Treasury currently takes advice from the Department on the health impact of cigarette price changes. There is considerable further scope for the Department to take the lead in encouraging social policies which have the effect of promoting health, particularly among those groups who currently suffer the worst health.

4.36 In this connection, the White Paper promised that the Government would produce guidance on 'Policy Appraisal and Health'. This document has not yet been published; we believe that it could be important, and look forward to its publication.

Alliances at National and Local Level

4.37 Working in alliance with a wide range of interests is as important at a national level as it is at local level. Illustrations of the ways in which existing cross-Department (and other agency) working can help to tackle variations include work with:

- the Department of the Environment on WHO's Healthy Cities initiative (potential for tackling socio-economic and ethnic variations);
- the Department of the Environment on City Challenge (potential for tackling socio-economic and ethnic variations);
- a wide range of interests from the food and retail industries and elsewhere on healthy diets for those on low incomes (potential for tackling socio-economic variations).
- the Home Office on 'Tackling Drugs Together' and on Healthy Prisons (various disadvantaged groups).

4.38 The Department also has an important role in promoting and supporting alliances at a local level, through the dissemination of good practice, and encouragement through measures such as its Health Alliance Awards. The award scheme was not designed specifically to tackle variations, but in many cases the projects entered were targeted effectively to do so. For future years, tackling variations could be made one of the explicit criteria for judging schemes.

4.39 City Challenge, sponsored by the Department of the Environment deserves particular mention because of the important part it has played in supporting some of the more significant projects mentioned in the previous section on the role of the NHS. City Challenge aims to address the problems of run-down urban areas and involves local partnerships of Local Authorities and the public, private and voluntary sectors. Health is one element of the scheme, and several projects have enabled the NHS, in partnership with others, to participate in activity which tackles many of the key determinants of health which are outwith its direct responsibilities. We see this as a very valuable model for further multi-sectoral action to address health variations. Likewise, the creation of Drug Action Teams, as recommended in 'Tackling Drugs Together' appears to be generating some important new alliances at local level.

Promoting Equitable Access to Services

4.40 Through its resource allocation policies, the NHS Executive plays an important role in making sure that funding for health services is available according to relative need. Significant gains have been made in reducing geographical variations in the supply of health services, although at district level there is still some way to go in matching funding to relative need, as measured by weighted capitation. A new formula, used for the first time in 1995/96, introduces more sensitive measures of need which include weightings for socio-economic factors in conjunction with SMRs and age. Under the 1990 GP contract, GPs receive additional payments for working in deprived areas.

4.41 The forthcoming merger - subject to Parliamentary approval - of DHAs and FHSAs, and the continuing growth of GP Fundholding, mean that resource allocation policy needs to be reviewed once more. This review provides an important opportunity to look at how funding across both hospital and community services and family health services, can be made more sensitive to local circumstances, and consequently to variations in health between different localities and groups.

4.42 Funding the new Commissioning Agencies according to relative need will not in itself secure equitable access to services. We have already drawn attention to the need, at a local level, to monitor access to effective services across different groups and to identify and seek to overcome any barriers to access. Nationally, there is an important role in safeguarding the principle of equity, by holding NHS bodies to account as to how they give meaning to this principle in terms of:

- resource allocation following relative need;

- the availability of clinical care of proven cost-effectiveness for all those who need it, particularly those who have poorer health status;

- removing barriers to access for groups, especially those which have poorer health status;

- reducing variations in the outcome of treatment by promoting the speedy adoption of best clinical practice across the country.

Setting Targets and Providing an Information Framework

4.43 The Department of Health, in conjunction with OPCS, has a role in providing an information framework within which variations may be identified and monitored both locally and nationally. It also has an important role in setting specific targets within the Health of the Nation strategy for reducing variations in health.

4.44 Work should include:

- dissemination of existing information nationally and locally to commissioners and others who monitor variations;

- maintaining a framework of common classifications and definitions so that like may be compared with like across the country;

- ensuring that the requirements for information on health variations are considered in new information developments.

- identifying priority areas for action, setting national targets, and monitoring progress against them.

4.45 Much work is already being done in the information area, for example in the routine publication of data by both the Department and OPCS, and the work that the ESRC is doing for OPCS to review socio-economic classification.

Commissioning Research

4.46 Our recommendations on research needs are at Chapter 6. We see the Department of Health as playing an important part, in conjunction with other research funders, in commissioning research on both the causes of health variations, and the measures which might be taken to alleviate them. We have recommended that the Department should take the lead in setting up a regular meeting between research funders - particularly the Department itself, the MRC and the ESRC - to coordinate programmes of research on variations, to promote synergy and to avoid overlap.

Targeting Activity

4.47 Within the Health of the Nation key areas it is known that some groups are at higher risk of ill-health and premature death than others (see Annex C).

In some areas, the Department is taking specific action to target national-level work on those groups, for example, through: targeting the most recent anti-smoking campaign at the lower socio-economic groups; the work of the Low Income Group of the Nutrition Task Force; and several projects designed to help reduce coronary heart disease among the Asian community. There is scope for extending this work through the more systematic identification and targeting of groups at particular risk.

Providing National Support for Local Action

4.48 This can take various forms:

Providing Information on the Particular Needs of Different Groups

4.49 For example, to help health authorities identify particular ethnic needs within the local population, and to respond to them with appropriate services, the Department commissioned Professor Balarajan to produce a guide, 'Ethnicity and Health' which was published in July 1993. Later that year, the (then) NHS Management Executive established an Ethnic Health Unit to help NHS bodies, community groups and other local organisations to develop the policies, skills and attitudes needed for effective health care of ethnic groups. More recently, the Department has funded a national project, 'Improving the Health of Ethnic Minority Communities' which includes a review of current practice, and the development of a practical toolkit which will highlight good practice and offer practical guidance to purchasers and providers.

Advice on Local Needs Assessment and Purchasing

4.50 The NHS Executive has commissioned several research reviews on epidemiologically-based needs assessment. The purpose of the reviews is to:

- pioneer a method of summarising the population health care needs of a typical district for a specific disease or population group;

- compile the best information available on the incidence and prevalence of a particular disease or problem, and of service effectiveness, in a single document to save each district repeating the same process.

4.51 A number of reviews have been published on topics relevant to Health of the Nation. A review on mental illness makes specific suggestions concerning the particular needs of ethnic minorities, the homeless, and people in deprived and socially isolated areas. Unfortunately however, the other reviews make little mention of health variations, other than to draw attention to the most prominent variations, for example in respect of coronary heart disease and lung cancer. This is an opportunity missed, and we consider that future reviews could and should place considerably more emphasis on health variations, where they are of significance in the area concerned.

4.52 In 1992 the NHS Executive commissioned the King's Fund to set up a database to identify and disseminate innovations in purchasing. Regular bulletins are produced as part of the 'Purchasing in Practice' newsletter and workshops and seminars are held to share good practice. Additionally, the Birmingham Needs Network maintains a computer database of work on needs assessment. The database, on disk, is mailed quarterly to NHS public health departments. Both of these networks appear to be excellent vehicles for disseminating information on health variations, and could usefully be more significantly, and explicitly, used for this purpose.

Advice on Effectiveness

4.53 The NHS Executive issues an annual Executive Letter which provides access to bulletins, health needs assessments, clinical guidelines, and other sources of advice about clinical effectiveness. Effective Health Care Bulletins translate clear messages from reviews of research into clinical practice using a leaflet style. The Executive also sponsors and supports professional and academic bodies who wish to develop evidence based guidance documents for use by purchasers, providers, and individual clinicians in the NHS. Again, this work could prove a useful vehicle for a specific focus on health variations. For example, the Effective Health Care Bulletin on the Treatment of Depression in Primary Care, discusses variations in depression in the population and the scope for improving outcomes by improving the rate of detection of depression in general practice.

4.54 Work is in hand to develop population health outcome indicators (OIs), which show, in a defined population, the rate at which measurable events occur which represent good or bad outcomes. Population based OIs and the variations they reveal appear likely to prove an important tool not only for informing the commissioning of services locally, but also, more widely, for addressing issues of equity and opportunity for improvement. Variations in OIs between districts may be due to a number of causes, including prevalence and social factors as well as access to services and the performance of providers. Social factors and access problems may contribute to, but do not excuse, poor outcomes. Conversely, where outcomes are significantly better than average, there may be lessons for the rest of the NHS in how to organise and manage services.

Setting Priorities and Performance Management

4.55 The NHS Executive sets out priorities for NHS action each year in its Priorities and Planning Guidance, and health authorities are accountable to the Executive for their performance against those priorities through agreed individual corporate contracts. This process is a powerful tool for influencing local activity.

4.56 The need to tackle variations in health, between regions and between social groups, was specifically highlighted in the 1994/95 guidance, while the 1995/96 guidance draws attention to the need for services not only to improve the health of the population as a whole, but also to aim to reduce variations by targeting resources where needs are greatest. This is an encouraging start, and sets the right framework within which to take action forward. These words must be translated into concrete action however: first, through central support and advice to the NHS through such means as we have outlined above; and second, by using the performance management process to ensure that health authorities are acting upon the priorities set.

The Department's Role in the International Community

4.57 The Department's involvement in World Health Organisation (WHO) and European Union (EU) activities is especially useful for the purpose of international comparisons and information exchange, both in respect of the scale of variations and what is known about their causes, and of interventions to tackle variations. Existing activity which is most relevant to health variations, includes participation in the WHO 'Healthy Cities' initiative. Member countries produce progress reports in respect of meeting WHO's Health For All 2000 targets, which include a target for reducing inequalities in health between and within countries.

Support to the Voluntary Sector

4.58 The Department made available £53 million in 1993/94 in support of the voluntary sector, and a comparable level of funding is available in the current year. Many of the grants given go to voluntary agencies dealing with disadvantaged groups, and some are directly related to improving health in groups which experience particular problems. For example, a number of projects have been funded to improve information and access to services for ethnic minorities, in such areas as screening for diabetes in black and ethnic minority groups; improving maternity care for women from Asian communities; and videos on diabetes and the choices available in maternity care in Asian languages including Bengali. The Department has also funded the National Refugee Council to identify the health needs of refugee communities, and a survey to identify the number of linkworkers and advocates in primary and secondary care and their training needs.

4.59 Activities such as these can make a useful contribution in supplementing and informing action taken by other bodies. The Department should consider whether there is scope for further targeting voluntary sector funding to address health variations.

Conclusions

4.60 Within the NHS, there is clearly concern about variations in health, as evidenced by a wide variety of work to address the issue, some of which is illustrated in this report. However, much work is still at the margins of health authority activity, and a great deal is either unevaluated, or the lessons of evaluation are not more widely available for others to learn from. What is now needed is for the NHS at local level to undertake a more systematic identification of local health variations, and to design and implement measures to tackle them. Future interventions must be rigorously evaluated, particularly for cost-effectiveness, and the findings of evaluations should be disseminated widely.

4.61 We recommend specifically that health authorities and GP purchasers should have a plan for identifying and tackling variations, and for evaluating interventions. The plan should include provision for working in alliance with other relevant bodies. Health authorities should also take steps to monitor access to services to safeguard equitable access.

4.62 The Department of Health has made an important start in taking seriously the issue of health variations, through putting in place the Health of the Nation strategy, and within that strategy, setting up this group. Health of the Nation is significant in that first, it places a new and welcome emphasis on health status, and second, it draws attention to the need to consider the health consequences of all public policy, not just that relating to the Department's own work.

4.63 We have identified a number of aspects of the Department's work which provide an opportunity to tackle variations. The vehicles and tools which are needed are largely there. To some extent they are being used already in ways which address the poorer health status of particular groups, albeit not always explicitly with the aim of reducing variations. There are far greater opportunities to be exploited however by means of setting specific objectives in relation to variations, and making sure that relevant aspects of policy and practice are designed to help meet those objectives. The Department's responsibilities in respect of research are also important and are discussed in Chapter 6.

4.64 We recommend specifically that the Department of Health should work actively in alliance with other government departments and other bodies to encourage social policies which promote health; should hold the NHS to account for implementation of the recommendations at 4.61 above; and should take forward our recommendations on research (see Chapter 6).

4.65 Given the many and complex factors which contribute to variations in health, the importance of alliances, at both national and local level, cannot be over-stated. Genuine progress will depend on the involvement of other government departments, local authorities, the voluntary sector and individuals and communities themselves. The Department and the NHS have a particular role in drawing attention to the need for such alliances and providing leadership and support.

4.66 All those in the health and social services field, including the Department, health authorities, Trusts, general practices, community teams and local authorities, can play a role any strategy to address variations in health by:

acting as informed advocates of health and social policies which will effectively address inequalities;

providing professional leadership, presenting evidence of differential need, and what can be done about it;

ensuring that the core responsibilities of purchasers and commissioning authorities extend beyond the boundaries of obtaining health and social care services;

forming strategic alliances with other agencies to develop public health programmes which protect and strengthen local communities;

ensuring equity of access to effective health and social care through allocating resources equitably, safeguarding high standards of care, and removing barriers to access in ways which meet the needs of different groups;

monitoring differences in health outcomes which result from the unequal structuring and distribution of health care;

focusing influence, effort and resources on addressing variations in particular diseases between social groups and investing in targeted interventions;

supporting inter-disciplinary research into the causes of unequal health status and identifying priorities for policy innovation.

CHAPTER 5: WHAT IS KNOWN ABOUT EFFECTIVE INTERVENTIONS?

5.1 We wanted to know what interventions had already been shown to be effective in reducing variations. We therefore commissioned the NHS Centre for Reviews and Dissemination (CRD) at York[34] to carry out a review of the literature to identify evaluated interventions which had the explicit aim of reducing variations in health status within a population, or which were likely to have that effect by means of improving the health of a particularly vulnerable group.

5.2 The CRD intends to publish the review in summer 1995. Here, we describe the objectives and method of the review, highlight some characteristics of the interventions which were looked at, and discuss what can be learned from the review. We strongly recommend that interested parties obtain copies of the review itself, which includes much fuller information, including details about individual studies, than we are able to include here.

Objectives and Method of Review

5.3 The aim of the review was to identify interventions for which there is evidence of effectiveness in reducing variations in health status between different population groups. The variations of primary interest were those associated with differences in socioeconomic status, gender, ethnicity, age or geographic region. An intervention was defined as an activity in which resources (public, voluntary or private) were used with the intention of improving the poor health experience of certain people, both absolutely and relatively. The interventions examined were those of a broad public health nature, including those which promote equitable access to services, which could be provided by the NHS (either alone or in collaboration with other agencies), and which were relevant to the UK. Interventions covered were those seeking to reduce variations in the Health of the Nation areas of CHD and stroke, cancers, mental illness, HIV/AIDS and sexual health, and accidents, and in general health. Interventions which addressed other, more general health areas which were likely to be relevant were also included - for example, child health and development, health in pregnancy, and nutrition.

5.4 A systematic search of the literature was conducted between September 1994 and February 1995. A total of 82 studies were identified which satisfied all inclusion criteria. Because of the diversity of the interventions, settings, populations and outcomes studied, it was not possible to carry out a sensible quantitative synthesis of the results. However, a narrative review attempted to identify possible patterns in the data or characteristics of successful interventions.

---

[34] The review was carried out by Lorna Arblaster, Vikki Entwistle, Mark Lambert, Trevor Sheldon and Ian Watt. Consultants to the review were George Davey Smith, Louise Gunning-Schepers, Jennie Popay and Margaret Whitehead.

5.5 Given the broad nature of the review, the extent of the potentially relevant literature and its limited time-scale, the whole range of designs of studies could not be examined in detail and consequently, only experimental studies were considered. This excludes the results of observational studies and it is therefore impossible to be certain that the review has not missed any significant and effective interventions. To check this however, the review scanned the studies included in two recent related reviews in this area where observational studies had not been excluded[35] and a book which broadly considered this area[36] A good deal of the ground they covered fell outside the Health of the Nation ambit but nonetheless, after examining these interventions and the results of the evaluations, the results seem broadly in line with those reported in this review and there do not appear to be programmes which had a significant impact on variations in health which have been omitted.

Weaknesses of Some Studies

5.6 A number of common methodological weaknesses were identified which need to be taken into account when assessing the available information on interventions and in the design of future evaluations:

- inadequate descriptions of the nature and content of the interventions used. This makes attempts to replicate the interventions difficult;

- limited or no information on the methods used to recruit study subjects and the numbers of subjects participating;

- small sample sizes which reduce the ability to detect differences as statistically significant, which may not allow conclusions to be drawn about effectiveness. (Attrition rates in these studies are often high, which exacerbates the problem);

- absence of a control group. In some cases, a time series analysis can mitigate against the ensuing problems of drawing conclusions without a control; however, the effect of secular trends have seldom been addressed in the studies reviewed here;

---

[35] (Gepkins and Gunning Schepers, 1993; Bunton et al, 1994)

[36] (Schorr and Schorr, 1988)

- many studies failed to carry out or report baseline measurements. Assessing the comparability of the study and control groups before the intervention was therefore problematic. Even in randomised studies, particularly the smaller ones, it cannot be assumed that intervention and control groups will necessarily be similar at baseline;

- inappropriate outcome measures;

- inadequate time spans. Follow-ups were too short to be able to assess the potential value of an intervention, or to give a reasonable indication of whether short term effects are sustained;

- breaking of randomisation between delivering the intervention and reporting the results. This greatly weakens the strength of evidence presented by such studies.

Summary of Problems in Study Design

Inappropriate design of intervention
Cost effectiveness not considered
Small sample size
No control group
Baseline data not collected or reported
Breaking randomisation or inappropriate subgroup analysis
Inadequate follow up

5.7 Very few studies reviewed explicitly considered the cost effectiveness of the intervention used. Basic data on the cost of interventions were rarely given. Without such information, it is difficult for organisations to make rational decisions about which interventions to support.

5.8 The review also found that the intervention was not always accepted by the target group. Examples could be where a school-based health education programme had a different impact on pupils from different ethnic backgrounds, or where health advocacy may not have been readily accepted by many women in the target group, leading to a high level of attrition.

5.9 The majority of studies identified in the review took place outside the UK, most frequently in the United States. Findings from these studies may not be transferable because of differences in the organisation and delivery of health services, the cultural attributes of the population targeted or the settings in which treatments were delivered. It cannot be assumed that interventions designed for a particular group in the USA would be successful with apparently similar groups in this country. However if interventions have been shown to be effective, they should be considered for evaluation in a UK setting. It would also be important to investigate the effects of modifications, for example to information presentation, intended to make interventions more culturally appropriate.

Characteristics of Interventions

5.10 Various characteristics of interventions were examined for the lessons which might be drawn. Below, the review team draw out some of those characteristics with illustrations of study findings.

Vigorous or Intensive Approaches

5.11 Some interventions were characterised by a vigorous and intensive approach to the identification and subsequent treatment or screening of individuals. For example, Levine & Bone (1990) used community health workers to screen, counsel, follow up and monitor people with high blood pressure, focusing their efforts on young black males whom they recruited from the emergency room. A similar approach was used by Stamler, Hardy et al (1987). Tudor Hart et al (1991) found such an approach useful in tackling a wider range of health problems in a UK primary care setting.

5.12 However, this approach was not always evaluated as successful, and the size of the effect varied. For example, Marsh and Channing (1988) conducted an intensive campaign to improve uptake of a variety of preventive services, and while they achieved some success in encouraging the measurement of blood pressure, little difference was demonstrated between the intervention and control groups with respect to uptake of cervical smears.

Multi-Faceted Approaches

5.13 Some studies set out to tackle several potential barriers to achieving the desired outcomes. For example, Freeborn, Mullooly et al (1978) trained their outreach workers to address a number of different issues to try and improve the uptake of ambulatory care services by low income families. These included: teaching the value of good health and health practices; encouraging and assisting with the use of health services; and directing people to appropriate community resources. Similarly, Bush, Zuckerman et al (1989) evaluated an intervention comprising a school-based curriculum, a personalised health screen at the start of each school year, use of a personal "health passport" record for children and a quarterly magazine for parents. Whilst the quality of the evidence in terms of cause and effect was relatively weak, the results suggested that the intervention had a positive effect on the prevalence of key risk factors for coronary heart disease in the target population.

Multi-Disciplinary Approaches

5.14 Several interventions involved a multi-disciplinary approach, and/or collaboration between agencies and between lay and professional groups. For example, Davidson, Durkin et al (1994) reported on the efforts of a coalition of local agencies to reduce accidents among children and adolescents. The agencies were involved in a variety of activities, including improving play areas (with the children's help), providing sports clinics, and implementing safety programmes.

Face to Face Interactions

5.15 Face to face interactions with individuals or small groups from the target population, were often conducted informally. The precise nature of these interactions varied greatly making anything other than a broad interpretation inadvisable.

5.16 The interventions varied from more structured interactions (e.g. giving a standardised presentation, Ashworth, DuRant et al (1994) in their attempt to improve knowledge and attitudes relating to HIV/AIDS), to informal, more flexible interactions (e.g. highly individualised meetings between case managers and clients as described by Wasylenki, Goering et al (1993) who were attempting to improve the mental health of homeless people). Secondly, they varied according to whether they were client directed (according to clients' expressed preferences or established needs, e.g. Morse, Calsyn et al (1992) in an attempt to improve the mental health of homeless people), or directed by the professional (e.g. Kegeles (1969) in an attempt to increase uptake of cervical screening).

Individual and Group Approaches

5.17 Success has been evaluated in both group and individually delivered interventions. For example, Ashworth, DuRant et al (1994) using educational interventions given to individuals and Kelly, Murphy et al (1994) using group education and discussion sessions, both showed some improvement in the AIDS related knowledge and attitudes of disadvantaged

American women. Insight into the different potential of group and individual interventions is provided by Kistin et al (1990). With the aim of improving breast feeding rates, they provided an educational intervention through either a group discussion, or a one-to-one contact. Both approaches showed higher breast feeding rates in the experimental groups than the control group which received no educational intervention. However, the results suggest that group discussion may be better at reinforcing a decision to breast feed, while individual contact may be more successful in encouraging women who had intended to bottle feed their infant to breast feed.

5.18 From the evidence it is not possible to identify any specific areas where the a group approach gives advantages over an individual approach. or vice-versa. Decisions will, therefore, need to be based on best judgement, taking into account the target group, the nature of the intervention, and, possibly, the available skills.

Settings

5.19 Interventions in a variety of settings have been favourably evaluated. There are advantages and disadvantages to most, and again it must be stressed that settings are complex concepts, and that they form only one aspect of a complex intervention. For example, many successful interventions involved home visiting. At first glance a home visit seems to be a relatively simple type or feature of an intervention, however, several factors varied, including

- who was visited at home (e.g. families, single mothers, people with mental health problems);
- by whom they were visited (e.g. health visitor, trained peer);
- the purpose of the visit (e.g. discussion, assessment of client or home, presentation of a video);
- the length and frequency of home visits;
- the aim (e.g. to encourage attendance at clinics for preventive health services, to improve the quality of nutrition or child care, or to prevent accidents in the home).

5.20 There was insufficient evidence to explain why home visiting might contribute to the success of an intervention. However, several possible mechanisms can be postulated:

- actions taking place on the client's rather than the professional's territory;

- perceptions that the professional cared enough or the subject was important enough to warrant a visit; and

- perhaps, it also allowed the intervention to be better tailored to the client's needs.

5.21 Home visiting may be more appropriate for some target populations and health objectives than others. For example, in one study breast cancer screening rates in an ethnic minority group failed to improve (Hoare et al, 1994). Tableman, Feis et al (1995) found that disadvantaged women with young children valued the opportunity for social contact provided by small group training sessions held outside the home.

5.22 Similar caution is needed when interpreting the value of other settings. For example, school-based educational sessions may be delivered by classroom teachers (specially trained or otherwise eg Walter and Vaughn, 1993), volunteer medical students (Benson et al, 1986), or trained older students from the same school (Howard and Mccabe, 1990), to mixed or single sex groups of different sizes, dealing with different topics.

Prior Needs Assessments to Inform Design of Interventions

5.23 Prior needs assessment is intuitively appealing, but again it is not possible to establish from the studies reviewed what influence it had on the success or otherwise of the intervention. Examples of interventions based on needs assessment were reported by Dennison (1972), who devised an instructional programme on the basis of the findings of a knowledge assessment exercise, and by Colver, Hutchinson et al (1982) who identified hazards in family homes before providing specific advice on how these could be remedied.

Ensuring Interventions are Culturally Appropriate

5.24 Cultural considerations may influence the approach adopted. For example, McAvoy & Raza (1991) found that a recognisably Moslem assistant had some success in improving the uptake of cervical cancer screening among women of New Commonwealth and Pakistani descent whom she visited at home. Videos and leaflets in appropriate languages were produced. Jemmott & Jemmott (1992) used the results of interviews with members of the target group when designing and developing their intervention. Quirk, Godkin et al (1993) evaluated an AIDS prevention programme which was given by a trained peer using a professionally-produced rap video based on lyrics written and performed by local teenagers.

5.25 Conversely, Hoare, Thomas et al (1994) found that home visiting by culturally appropriate linkworkers to encourage Bangladeshi and Pakistani women to attend breast screening clinics resulted in no improvement in uptake rates compared to the control group.

The Importance of the Messenger

5.26 The types of people involved in the studies reviewed included health professionals, educational professionals and outreach workers. Interestingly, several successful interventions have recruited, and given appropriate training to non-professional volunteers, often from the target population. For example: Howard & McCabe (1990) used trained 11th and 12th grade students to help deliver sex education to 8th grade students; Johnson, Howell et al (1993) used experienced mothers to support new mothers living in deprived areas; Freeborn, Mullooly et al (1978) recruited outreach workers from disadvantaged communities and trained them to encourage appropriate use of ambulatory care services by other low income families.

Support Materials

5.27 Several interventions used educational materials such as booklets and videos either in addition to other approaches or on their own. However, only brief details on the precise content or presentational style of the materials used were included. Because of this lack and the diversity of educational materials used within a range of differing interventions it is impossible to give clear advice on the nature of effective educational materials.

5.28 The provision of educational materials may sometimes increase variations in health. For example, Hibbard, Robinson et al (1979) gave an educational booklet to pregnant women and encouraged them to attend mothercraft classes. Women in higher social classes showed far greater gains in knowledge during pregnancy than those in lower social classes.

Development of Skills

5.29 Barriers to appropriate access to health care, or to changing behaviour to reduce health risks, include not only a lack of knowledge but also an inability to act upon it, either because of a lack of skills or a lack of material resources. Some of the interventions studied sought to develop skills among the target populations which might facilitate their adoption of more health promoting activity. Howard & McCabe (1990) used audiovisual materials to illustrate some of the pressures on teenagers to have sex and attempted in their intervention to develop skills which would enable them to effectively resist these pressures. Kelly, Murphy et al (1994) used group sessions to help disadvantaged young Afro-American women to recognise personal triggers to risk taking sexual behaviour, and to develop assertive techniques which would enable them to reduce their risk of HIV infection. Morse, Calsyn et al (1992) provided, among other things, interpersonal and community living skills training for homeless mentally ill people.

Provision of Material Support and Resources

5.30 Material support was used in some attempts to remove any barriers to accessing health services or to increase participation in group activities. For example, Olds, Henderson et al (1994) provided free transport to antenatal and child health clinics for women living in poor rural areas. Tableman, Feis et al (1985) provided free transport, child care and refreshments to young mothers attending stress management training sessions. In the same vein, establishing a citizens advice bureau office in a primary care setting could give those in disadvantaged groups greater access to advice and resources in the form of welfare payments or benefits (Paris and Player, 1993; Veitch 1994).

Provision of Prompts and Reminders to Attend

5.31 Several successful interventions used prompts or personal reminders to encourage people to use services or keep appointments. Planos & Glenwick (1986) found that telephone or mail reminders one or two days before a scheduled mental health assessment were associated with higher than average attendance rates. Lerman, Hanjani et al (1992) used a health educator to telephone women who missed appointments for colposcopy. Subsequent attendance rates where higher among women who received the intervention than among those who did not. Hochstadt & Trybula (1980) found that both telephone and mail reminders were associated with better appointment keeping at a community mental health clinic than no reminders. However, staff who had previously used the time created by clients missing appointments to complete reports and do other work felt increasingly pressurised as greater proportions of people turned up for their appointments.

What Can Be Learned from the Review?

5.32 The studies included in this review were extremely diverse. Consequently, it would be inappropriate to combine the data in a quantitative way; care must also be taken not to over-analyze the study results to extract lessons for practice which are not justified by the evidence presented. Although it might be tempting to draw conclusions about the relative effectiveness of, for example, different approaches to increase the uptake of cervical screening amongst disadvantaged women, the relatively small number of studies, their heterogeneity and their complexity would make the resulting analysis unreliable. Few studies aimed to find out under what circumstances an intervention was likely to be more effective and comparisons can be misleading because other variables may differ.

5.33 Additionally, most of the studies reviewed came from overseas, a considerable number from the United States. Though these can provide useful pointers, we can not assume that results would be replicated in a British setting.

5.34 There is, however, some evidence that some features are common to several of the successful interventions. These features do not guarantee success but often appear in conjunction with it. They include:

* planned, systematic, intensive action
* inter-agency working
* combination of strategies/range of services
* provision of material support and resources
* development of skills in target group
* precise and intensive focusing on target group
* peer involvement
* prompts to use service

5.35 In order to help health authorities and others in thinking about these and other factors in designing interventions, the review team prepared a short checklist of questions to address. This is appended at Annex D.

Conclusions

5.36 The review demonstrates how limited is the available evidence on what is and isn't effective. It also shows how little evidence is available on how effective even the more successful interventions might be, both in terms of absolute and relative health gains -did the target group improve against a chosen measure in absolute terms and relative to other social groups? - and also, importantly, in terms of the value of the improvement relative to the amount of time, money and other resources devoted to the intervention.

5.37 We must conclude with some regret that the evidence to date on practical public health interventions in which the NHS might engage to reduce variations in health is, at best, scant. There are, however, a number of tentative conclusions to be drawn from this review (see para. 5.34 above) and a useful checklist has emerged to help focus attention on pertinent considerations when designing interventions (para. 5.35). Additionally, health authorities and others may find material of interest in the detail of the review relating to individual studies. Perhaps more encouragingly, a recent literature review in the Netherlands resulted in rather more cautiously positive evidence on effectiveness on which to draw.[37]

5.38 The relatively disappointing outcome to this review does not support the conclusion that nothing should be done. Rather, it gives added weight to our recommendations on research needs, and on the need for better evaluation of future activities.

---

[37] Gepkens. A and Gunning-Schepers L G. 'Interventions to reduce socio-economic health differences. Academic Medical Centre, University of Amsterdam Institute of Social Medicine.

CHAPTER 6: RESEARCH NEEDS AND PRIORITIES

Lessons for Research

6.1 We were asked to advise on areas where new epidemiological and research information is needed to inform the targeting of interventions for high risk groups of the population, and for further understanding of underlying processes relevant to longer term intervention. At the end of 1994 we presented a preliminary report to the Department of Health's Director of Research and Development, indicating our view that several types of research would be needed:

- studies to evaluate NHS-based interventions currently in use, which have the aim of reducing health variations;

- studies to inform the development of policy and practice within the sphere of direct DH/NHS influence, or where alliances may be formed with other sector organisations with the purpose of reducing health variations;

- longer-term, theory-based work exploring the processes by which health variations are produced, and contributing to a better understanding of the nature and timing of the interventions required.

6.2 Our recommendations for taking forward work in these three areas are set out below. We understand that DH is preparing a research initiative for which £2.4 million has been set aside and which will be launched early in 1996. However, some of this work will also be for funding by local purchasers, the Research Councils, the HEA and charitable research funders, such as the Rowntree Foundation.

Evaluation of NHS-Based Interventions

6.3 Our work has shown a pressing need for reliable information on effective interventions and for the dissemination of such data. Much of this work will need to be carried out at local level, with purchasers implementing interventions to reduce health variations in their area and evaluating them appropriately. However, research on general issues concerning evaluation of interventions and the evaluation of large-scale interventions may be more appropriate for the DH and NHS research programmes.

6.4 As the CRD's review showed, evaluation of interventions in this area frequently lacks rigour. While most of the studies reviewed had some design inadequacies a smaller number were more seriously flawed, in that they appeared to have given little or no attention to even the basics of research design, such as clarifying the research question and identifying appropriate study design and outcome measures. Some studies which collected qualitative outcome data did so in an ad hoc way without reference to a formal methodology.

6.5 We therefore recommend that purchasers undertake rigorous evaluation of interventions which they implement to reduce variations in health in their area. Drawing on CRD's review and other research literature, they may wish to evaluate interventions which have been shown to be effective elsewhere, but which remain to be evaluated in the UK context. The need for studies of cost-effectiveness is particularly acute.

6.6 Purchasers will need to be supported in this task. We recommend that a clearing house should be set up to collate, on an on-going basis, published and unpublished information on:

- interventions which have been implemented and evaluated
- evaluation methodology
- the results of evaluations.

The clearing house would act as a resource to be consulted by purchasers and would conduct a rolling programme of active dissemination.

Research on Population Groups At Risk of Poor Health

6.7 These studies will inform the development of policy and effective interventions to address health variations within the Department of Health and the NHS, aiming to bring those who experience the worst health closer to a level comparable with the most advantaged groups.

6.8 This will require studies which summarize existing information, and where necessary, gather new data, on factors associated with particularly poor health in vulnerable groups of the population. Research into socio-behavioural factors will be required, as will studies influencing access to and uptake of health and social care in these groups. Studies of alliance working across services at local level, including voluntary organizations are indicated. It will also be important to examine the potential for health gain and cost effectiveness of interventions for specific population groups.

Theory-Based Research on Causes and Processes

6.9 Basic research on the networks of causal factors underlying health variations will be crucial to the development of longer-term, more complex interventions and the understanding of issues concerning the optimal timing for intervention and the time scale for anticipated effects. This will include work on such topics as early life influences, the cumulative effects of adverse experiences across the lifespan, the timing of key events affecting health protective factors, and the influence of psycho-social factors such as stress.

6.10 This will require the co-ordination of research across many disciplines, from the bio-medical, through to psychological and socio-cultural research, to research on the impact of social and economic policies. It will also require longer-term investment in programmes of basic research and a multi-disciplinary approach. The Medical Research Council and the Economic and Social Research Council are already involved in funding cohort studies and other long-term research into health variations. Organisations funding research will need to use and add to, rather than attempt to duplicate, the considerable body of work already available.

6.11 In our report to the Director of Research and Development we recommended that a consultation exercise should be commissioned to draw upon a wider range of views to inform planning of the Department's research initiative. We thought it should consider the requirement for reviews and meta-analyses of existing research, secondary analysis of existing datasets, methodological development, and new research.

6.12 This exercise has now been commissioned from Professor Ann Oakley of the Social Science Research Unit at the Institute of Education, London University, and Professor Jennie Popay of the Public Health Research and Resource Centre, at the University of Salford. They will report to the Department in Autumn 1995.

6.13 We also recommended that DH should set up a co-ordinating group of main funders of research into health variations.

Conclusions

6.14 We have recommended that:

- purchasers undertake rigorous evaluation of interventions which they implement to reduce variations in health. There is a particularly acute need for studies of cost-effectiveness;

- purchasers are supported in the task of evaluation by the establishment of a clearing house;

- the MRC, ESRC, the Department of Health, and others should coordinate their programmes of research on health variations and that the Department should set up a regular meeting of research funders;

- a research consultation exercise should be commissioned to inform the Department's research initiative. Some of the more urgent priorities may be taken forward by the Department, but some might be referred to the Research Councils.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

General

7.1 In common with many others, we welcome and endorse the Chief Medical Officer's recognition - as shown by the establishment of this group - that action to tackle variations in health is central to achievement of the government's Health of the Nation strategy.

7.2 The existence of systematic variations in mortality and morbidity between different groups of the population has now been well documented in the UK and elsewhere in the developed world. It seems likely that cumulative differential lifetime exposure to health damaging or health promoting physical and social environments is the main explanation for observed variations in health and life expectancy, with health related social mobility, health damaging or promoting behaviours, use of health services, and genetic or biological factors also contributing.

7.3 To focus on the needs of those who experience the worst health is not to belittle the significant gains in health over the past few decades across the whole social spectrum - these can be welcomed wholeheartedly. Rather, it is to recognize that there exists substantial potential for improving the health and well-being of whole sectors of the community.

7.4 Everybody should have the opportunity to attain their full potential for health. Variations indicate the extent of potentially preventable ill-health and premature death, and in those groups which suffer the worst health, there are the greatest potential gains to be made. An important way of achieving Health of the Nation targets is by improving the health of the least healthy groups to the levels attained by the most healthy groups.

The Evidence on Effectiveness

7.5 Our terms of reference asked us to advise on how the Department of Health and the NHS might make best use of existing information to tackle interventions, with particular reference to effectiveness. Our work has identified a considerable body of information on variations, including those which are most relevant in the Health of the Nation key areas (Chapter 2 and Annex C). We have also identified a great deal of activity which is underway at a local level to tackle health variations (Chapter 4), although evaluation findings are not available for much of this work.

7.6 A literature review commissioned specifically to identify evidence on effective interventions proved disappointingly inconclusive. The available evidence on what is, and isn't effective, is limited. More limited still is evidence on how effective even the more successful interventions might be, both in terms of absolute and relative health gains, and in terms of the cost-effectiveness of interventions.

7.7 There is, however, tentative evidence that some features are common to several of the successful interventions. These features do not guarantee success, but often appear in conjunction with it. They include:

- planned, systematic and intensive action;
- inter-agency working;
- a combination of strategies/range of services;
- the provision of material support and resources;
- the development of skills in the target group;
- precise and intensive focusing on the target group;
- peer involvement;
- prompts to use services.

7.8 At Annex D is a checklist of questions to address in designing interventions, to help consider these and other factors.

7.9 The extent and variety of activity currently underway at a local level shows that there is great potential for moving forward quickly in learning about effective interventions, provided that evaluation is a key component of such activity. The relatively disappointing outcome of the literature review does not support the conclusion that nothing should be done. Rather, it gives added weight to our recommendations on research needs and on the need for systematic evaluation of future interventions.

The Role of the NHS and the Department of Health

7.10 The Department of Health has made an important start in taking seriously the issue of health variations. We have identified a number of elements of the Department's work which provide an opportunity to tackle variations, although the relevance and importance of health variations are frequently not recognised adequately within this work. In the NHS, there is a rather more explicit recognition of the issue, and the range of activity underway is heartening. Even so, much of that activity is on a small scale, and at the margins of health authority business. Very few places seem to be exploiting the opportunities to address the issue in their mainstream work.

7.11 In short, tackling health variations is an aspect of a great deal of the work which both the Department and the NHS is doing already, but one which is not being given sufficient emphasis. What is needed now is not a new 'initiative', isolated from mainstream work, but a much more explicit targeting of the issue within existing policies and activities. The context is already favourable: the Department is leading a government-wide strategy to improve the nation's health, and the NHS is not only a key player in that strategy, but also has a stronger focus than ever before on identifying and meeting the needs of local populations. There already exist vehicles for taking work forward, and many of the tools needed are also available.

7.12 Given the many and complex factors which contribute to variations in health, the importance of alliances, at both national and local level, can not be over-stated. Progress will depend on the involvement of other government departments, local authorities, the voluntary sector, and communities and individuals themselves. The Department and the NHS have a particular responsibility in drawing attention to the need for such alliances and providing leadership and support.

7.13 The NHS has responsibility for the following:

- identifying health variations at a local level, as a routine component of health needs assessment work. Support should be provided to GP purchasers in this work;

- setting specific local targets for improving the health experience of particular groups or areas, in absolute terms and relative to other groups;

- providing effective access to healthcare services. This should include:

    - checking that clinical care of proven cost-effectiveness is available to all, particularly those who experience the worst health and those who may have difficulty in accessing services;

    - identifying and removing barriers to accessing services on the part of particular groups;

    - reducing avoidable variations in treatment outcome by the speedy adoption of best clinical practice;

    - providing special services and treatment to meet special needs faced by some groups (eg. sickle cell anaemia).

- involving a wide range of bodies in strategic alliances to improve the health of communities;

- allocating resources at sub-district level according to relative need;

- health variations to be identified and addressed by primary care purchasers, with the support of commissioning agencies;

- putting in place public health programmes aimed at helping individuals directly, or at strengthening social support within communities. These programmes to build on available best practice (see paras. 4.30 and 4.31) and to be rigorously evaluated;

- acting as a responsible employer in ways which promote good health.

7.14 Specifically, we recommend that:

- health authorities and GP purchasers should have a plan for identifying and tackling variations, and for evaluating interventions;

- the plan should include provision for working in alliance with other relevant bodies;

- health authorities, GP purchasers and Trusts should take steps to monitor access to services to safeguard equitable access.

7.15 The Department of Health has responsibility for the following:

- taking a lead across government in arguing for social policies which have the effect of promoting health, particularly among those groups which currently suffer the worst health;

- forging national alliances with other bodies - including other government departments - to work together to tackle the causes of variations which are outwith the scope of the Department's own responsibilities; and encouraging and supporting such alliances at a local level;

- promoting equitable access to services, through resource allocation policies which distribute funding and other resources according to relative need; and by holding the NHS to account for upholding the principle of equity of access to effective health and social care services;

- setting specific targets for reductions in health variations, and providing the information framework within which variations may be identified and monitored both locally and nationally;

- commissioning research and contributing to the work of other research funders (see para. 7.17 below);
- targeting its own health promotion activity on groups which stand to benefit most, including those who experience the poorest health status, and ensuring that activity is sensitive to the particular needs and circumstances of such groups;
- providing national support for local activities (eg. advice on needs assessment and effectiveness) which specifically addresses the issue of health variations;
- setting as a priority for the NHS the identification and reduction of variations in health, and using the performance management process actively to ensure that health authorities and other purchasers are acting upon those priorities;
- playing a part in international fora in exchanging information about variations and measures to address them;
- supporting the voluntary sector through grant-funding measures to tackle health variations.

7.16 Specifically, we recommend that the Department of Health:

- should work actively in alliance with other government departments and other bodies to encourage social policies which promote health;
- should hold the NHS to account for implementation of the recommendations at 7.14 above;
- and should take forward our recommendations on research (see below).

Research

7.17 We recommend that:

- purchasers undertake rigorous evaluation of interventions which they implement to reduce variations in health. There is a particularly acute need for studies of cost-effectiveness;
- purchasers are supported in the task of evaluation by the establishment of a clearing house to collate published and unpublished information

on interventions which have been implemented and evaluated; evaluation methodologies; and the results of evaluations. The clearing house should conduct a rolling programme of active dissemination. It is for the Department of Health to take this forward, either by drawing on existing vehicles for disseminating information on effectiveness or if none of these are suitable, by introducing new arrangements;

- the MRC, ESRC and the Department of Health should coordinate their research on health variations and that the Department should set up a regular meeting of research funders to help with this;

- the Department of Health research consultation exercise should recommend priorities for the evaluation of interventions to address health variations, research to address the needs of particularly vulnerable groups of the population, and basic research into causal processes. Some of the more urgent priorities may be taken forward by the Department, but some might be referred to the Research Councils under existing Concordats.

Follow-Up

7.18 We look to the Chief Medical Officer's Working Group, to whom we report, to take a continuing interest in the issue of health variations and to follow up this report with checks on progress.

ABBREVIATIONS

CABG	Coronary Artery Bypass Graft
CHD	Coronary Heart Disease
CRD	Centre for Reviews and Dissemination
DH	Department of Health
DHA	District Health Authority
DPH	Director of Public Health
ESRC	Economic and Social Research Council
FHSA	Family Health Service Authority
GPFH	General Practice Fundholder
HA	Health Authority
MRC	Medical Research Council
NHS	National Health Service
OI	Outcome Indicator
OPCS	Office of Population Censuses and Surveys
PHC	Primary Health Care
RHA	Regional Health Authority
SMR	Standardised Mortality Ratio
WHO	World Health Organisation

THE VARIATIONS IN HEALTH SUB-GROUP OF THE CHIEF MEDICAL OFFICER'S HEALTH OF THE NATION WORKING GROUP

Membership

Dr J Metters	(Chair) Deputy Chief Medical Officer, Department of Health
Dr S Adam	Director of Public Health, North Thames (West) (until March 1995)
Mr D Benton	Regional Nurse Director, Northern and Yorkshire Health Authority
Dr J Chambers	Director of Public Health, North Birmingham Health Authority
Prof P Fonagy	Director of the sub-Department of Clinical Health Psychology, University College London
Dr J Fox	Chief Medical Statistician, Office of Population Censuses and Surveys
Dr K Kelleher	Director of Public Health, Wolverhampton Health Executive
Prof S Macintyre	Director of Medical Research Council Medical Sociology Unit, Glasgow
Prof M Marmot	Director of International Centre for Health and Society, and Head of Department of Epidemiology and Public Health, University College London
Prof M Pringle	Professor of General Practice, Department of General Practice, The Medical School, Nottingham
Dr J Harbison	Under Secretary, Department of Health and Social Security Northern Ireland (Observer)
Mr P Linthwaite	Head of Policy and Evaluation Division, Economic and Social Research Council (Observer)
Dr A Peatfield	Executive Secretary to Health Services and Public Health Research Board, Medical Research Council (Observer)

The Department of Health (including the NHS Executive) provided advisers and a Secretariat.

HEALTH OF THE NATION MAIN TARGETS

Coronary Heart Disease and Stroke

To reduce death rates for both CHD and stroke in people under 65 by at least 40% by the year 2000. (Baseline 1990)[38]

To reduce the death rate for CHD in people aged 65-74 by at least 30% by the year 2000. (Baseline 1990)

To reduce the death rate for stroke in people aged 65-74 by at least 40% by the year 2000. (Baseline 1990)

Cancers

To reduce the death rate for breast cancer in the population invited for screening by at least 25% by the year 2000. (Baseline 1990)

To reduce the incidence of invasive cervical cancer by at least 20% by the year 2000. (Baseline 1986)

To reduce the death rate for lung cancer under the age of 75 by at least 30% in men and by at least 15% in women. (Baseline 1990)

To halt the year-on-year increase in the incidence of skin cancer by 2005.

Mental Illness

To improve significantly the health and social functioning of mentally ill people.

To reduce the overall suicide rate by at least 15% by the year 2000. (Baseline 1990)

To reduce the suicide rate of severely mentally ill people by at least 33% by the year 2000. (Baseline 1990)

HIV/AIDS and Sexual Health

To reduce the incidence of gonorrhoea by at least 20% by 1995 (Baseline 1990) as an indicator of HIV/AIDS trends.

---

[38] The 1990 baseline for all mortality targets represents an average of three years centred around 1990.

To reduce by at least 50% the rate of conceptions amongst the under 16s by the year 2000. (Baseline 1989)

Accidents

To reduce the death rate for accidents among children aged under 15 by at least 33% by the year 2005. (Baseline 1990)

To reduce the death rate for accidents among young people aged 15-24 by at least 25% by the year 2005. (Baseline 1990)

To reduce the death rate for accidents among people aged 65 and over by at least 33% by the year 2000. (Baseline 1990)

RISK FACTOR TARGETS

Smoking

To reduce the prevalence of cigarette smoking to no more than 20% by the year 2000 in both men and women (a reduction of a third). (Baseline 1990)

To reduce consumption of cigarettes by at least 40% by the year 2000. (Baseline 1990)

In addition to the overall reduction in prevalence, at least 33% of women smokers to stop smoking at the start of their pregnancy by the year 2000.

To reduce smoking prevalence of 11-15 year olds by at least 33% by 1994 (to less than 6%). (Baseline 1988)

Diet and Nutrition

To reduce the average percentage of food energy derived by the population from saturated fatty acids by at least 35% by 2005 (to no more than 11% of food energy). (Baseline 1990)

To reduce the average percentage of food energy derived from total fat by the population by at least 12% by 2005 (to no more than about 35% of total food energy). (Baseline 1990)

To reduce the proportion of men and women aged 16-64 who are obese by at least 25% and 35% respectively by 2005 (to no more than 6% of men and 8% of women). (Baseline 1986/87)

To reduce the proportion of men drinking more than 21 units of alcohol per week and women drinking more than 14 units per week by 30% by 2005 (to 18% of men and 7% of women). (Baseline 1990)

Blood Pressure

To reduce mean systolic blood pressure in the adult population by at least 5mm Hg by 2005. (Baseline derived from national health survey)

HIV/AIDS

To reduce the percentage of injecting drug misusers who report sharing injecting equipment in the previous 4 weeks from 20% in 1990 to no more than 10% by 1997 and no more than 5% by the year 2000.

HEALTH VARIATIONS IN THE 5 HEALTH OF THE NATION KEY AREAS - SOME ILLUSTRATIVE EXAMPLES

1. This Annex presents some illustrative examples of health variations in the 5 Health of the Nation key areas.[38] No attempt has been made to be comprehensive, nor should the examples chosen be taken to indicate which variations are considered to be priorities for further action.

CHD/STROKE KEY AREA

Background

2. CHD is the biggest killer in the UK and the main single cause of premature death in men and women. It is also a major cause of illness. In England it accounted for about 26% of all deaths in 1992, for 4% of total NHS expenditure, and results in 35 million lost working days per year.

3. Stroke accounted for approximately 12% of all deaths in 1992, and is also a major cause of disability, particularly amongst elderly people. Stroke accounts for 4% of total NHS expenditure and results in the loss of about 7.7 million working days each year.

Gender Variations

4. CHD is viewed by many as a "male disease". It is certainly true (as Figure 1 shows) that mortality rates from coronary heart disease are considerably higher amongst males than amongst females though in recent years they have been falling in both sexes. Nevertheless, female CHD deaths account for almost 46% of the total and it is the single greatest cause of death in women, both above and below the age of 65. However, the large majority of the female deaths occur in the 75+ age group, and therefore account for less of the premature mortality. Under the age of 65, men have 3.5 times the risk compared with women. Conversely, it has been shown that once women have developed coronary artery disease they are less likely to receive appropriate treatment even after potential confounding variables have been taken into account. However, recent unpublished data suggests that these differences are disappearing.

---

[38] The figures and tables were produced by the Department of Health's Central Health Monitoring Unit, often with the assistance of the Office of Population Censuses and Surveys.

5. Figure 2 shows that, as in the case of CHD mortality rates, stroke rates are higher amongst men than amongst women, though again in both groups they have shown a substantial decline in recent years. Stroke accounts for 15% of all deaths in females, compared to 9% in males.

Regional Variations

6. Considerable regional variations exist in CHD mortality rates. Standardised mortality ratios (SMRs) are much higher in many northern districts of England than districts in the South West and East Anglia (Figures 3a and 3b). Some of this variation can be explained by differences in the distribution of risk factors such as smoking and high blood pressure, but much of the variation has yet to be explained.

7. Mortality rates from stroke are in general higher in the North of England than in the South (Figure 3c).

Ethnic Variations

8. South Asians (Indians, Pakistanis, Bangladeshis and Sri Lankans) living in the UK have particularly high rates of CHD. Figure 4a shows data from a study of ethnic differences in mortality from ischaemic heart disease in England and Wales which found that in 1979-83, mortality from CHD was 36% higher in men and 46% higher in women aged 20-69 who had been born in the Indian Sub-continent than the rates for England and Wales as a whole. Deaths from CHD in this group are predicted to rise further due to the effects of demographic change. This high mortality cannot be easily explained by differences in diet, blood pressure, and cigarette consumption. Obesity and a predisposition to diabetes may be important (though as indicated below subjects from the Caribbean also have high rates of diabetes but do not have correspondingly high rates of coronary heart disease mortality). There is also some evidence that South Asians who suffer from coronary heart disease may experience longer delays in referral to specialist services, though the reasons for this are at present unclear.

9. Figure 4a shows that Caribbeans have a substantially lower mortality from coronary heart disease than the population as a whole, though Figure 4b shows that paradoxically they are at a much greater risk of stroke (mortality rates from coronary heart disease and stroke amongst those born in the African Commonwealth are intermediate between those for Caribbeans and those from the Indian Sub-Continent as they are a mixed group). In England and Wales mortality from stroke during 1979-83 was 76% higher in Caribbean men and 110% higher in Caribbean women i.e about double the average for England and Wales. People born in the Indian Sub-continent and the African Commonwealth also experienced significantly higher mortality from stroke. Black women are also more likely than

white women to consult for circulatory diseases in primary care.

10. Trends in stroke mortality in England and Wales also showed marked ethnic variations. The decline among Caribbean and African-born people is encouraging and reflects national patterns, but it is of concern that men from the Indian Sub-continent experienced little change. Despite the decline in stroke mortality among Caribbeans and Africans, levels in 1979-83 among men born in the Caribbean, Africa and the Indian Sub-continent exceeded the rate for England and Wales a decade earlier (1970-72), a pattern also shared by Caribbean women.

Socio-economic Variations

11. CHD is more prevalent in manual than professional social groups (Figure 5a). The British Regional Heart Study found a positive association between the proportion of manual workers in a town and the cardiovascular mortality rate. The Whitehall Study of male civil servants, which compared CHD rates and risk factors in different employment grades, found that over ten years, men in the lowest grade (messengers) had 3 times the CHD mortality of men in the highest grade (administrators). A man's employment grade was a stronger predictor of his subsequent risk of CHD death than any of the other major coronary risk factors (including smoking, blood pressure, blood cholesterol, lack of physical activity, overweight and height).

12. Similar variations occur with stroke (Figure 5b) - mortality rates being higher in Social Class V than in Social Class I.

MENTAL ILLNESS

13. This includes schizophrenia, manic depressive psychosis, depression, personality disorders, dementia, neurotic disorders and suicide. These illnesses show considerable variation in their distribution within the population.

Age and Gender Variations

14. Suicide is known to be twice as common in men as compared to women (see Figure 6). Although in some age/sex groups suicide rates have fallen over the last decade in others such as young males there was until very recently evidence of a worrying increase.

Ethnicity

15. African-Caribbeans in Britain have higher admission rates to psychiatric hospitals and are diagnosed as schizophrenic 3-6 times more often than the white population. Black people are over-represented among patients compulsorily

detained in psychiatric hospitals under the Mental Health Act, and in police admissions to psychiatric hospitals.

16. Asians in the UK have historically been thought to have low rates of mental illness and certainly have low rates of service use. For example, Figure 7 shows that consultation rates for mental disorders in primary care amongst women from the Indian Sub-continent are substantially lower than the average for women in the general population. Suicide rates are high also in East Africans, most of whom are of Indian Sub-continent origin. The excess of suicides among Asian women is greatest among the young, the rate in Asian girls aged 15-24 being more than double the national levels and at ages 25-34 being 60% higher (see Figure 7).

Socio-Economic Variations

17. Inner city dwelling and lower social class have both been associated with higher rates of treated mental illness (though as they are closely correlated with each other it is hard to identify the causal relationships). For example, women aged 16-44 in social classes IV and V are more likely to consult for mental disorders in primary care compared with those in social classes I and II.

18. The relationship between mental illness and unemployment is complex. Recent unemployment or unemployment in areas where the problem is rare is associated with high rates of depression. It is not so clear whether mental illness is so significant in areas where long term unemployment is common. Suicide rates are higher among the unemployed although the relationship is complex. Under 10% of all those who commit suicide are unemployed at the time.

ACCIDENTS

Background

19. Accidents are a major cause of death in England. They are the commonest cause of death in people under 30 years. They are also an important cause of illness and disability. Different patterns emerge depending on the type of accident, eg falls vs poisoning; location of accident eg home vs road traffic and the resultant injury, eg those seen in A&E departments vs those resulting in death.

Age and Gender Variations

20. The attached figures illustrate some of the variations in accidents by age and sex. Figure 8 gives data from the General Household Surveys for 1987-1989. Respondents, or parents in the case of children, were asked about accidents which they had had in the three months before interview for which they had seen a GP or attended hospital. The results will therefore reflect any age and sex differences in

the propensity to seek medical care as well as differences in accident rates. The data should be used to indicate broad patterns rather than examined in detail as the effects of rounding may be large in relation to reported incidence eg only 3% of women reported accidents.

21. Figure 8 shows that males reported accidents more frequently than females in all age groups except the under 5s, where there was little difference, and persons aged 65 and over, where the percentage of women reporting accidents was twice that of men. Part of the sex difference for the elderly may reflect differences in age; there were nearly twice as many women aged 75 and over in the sample as men. Male accident rates peaked in the 16-24 age group and fell through the older age groups. Female rates were highest in the 0-4 group.

22. Figure 9 gives the distribution of accidents by location. Almost half of females' accidents were in the home or garden compared with less than 30% for males. Much higher percentages of male than female accidents were in the workplace or sports areas. These differences no doubt reflect both the different locations in which the sexes on average spend their time as well as differences in their activities in the types of area specified. Men, for example, are more likely than women to do manual work and to do so in industries such as construction with high accident rates. Road accidents account for a slightly higher proportion of female than male accidents but this is of a smaller total. "Road" was defined broadly, only about a third of road accidents involved a moving motor vehicle.

23. Deaths from accidents (ICD E800-949) per 100,000 population by age and sex in the years 1990-1992 combined are shown in Figure 11. Overall the standardised death rate for males is more than twice that for females and male rates exceed female rates in every age group, but particularly among persons aged 15-34. The age distribution of deaths is very different from that of the occurence of accidents. There is a marked increase with age in death rates after the age of 70 and rates among those aged 75 and over are much higher than for any other group. Death rates among children aged under 1 used to be very high but have fallen extremely sharply and are now little different from those for older children. It should be noted that the Figure shows standardised death rates. The number of deaths among women aged 75 and over is nearly twice that among men reflecting the much larger number of women than men in the very elderly age groups.

Regional Variations

24. The three maps illustrate the regional variation in mortality rates from accidents in the three Health of the Nation target age groups: children under 15 (Figure 11), young people aged 15-24 (Figure 12) and elderly people aged 65 and over (Figure 13). The data are average rates for the years 1990-92, taken from the 1993 Public Health Common Data Set, and are age standardised.

25. For children under 15, mortality rates are highest in the North and West of England, and generally lower in the South. The highest rate is in Northern RHA, which is nearly twice as high as the lowest rate in South Western RHA. It should be noted that these rates are based on small numbers of deaths.

26. No obvious geographical pattern emerges for deaths in young people aged 15-24. The highest rate is in East Anglian RHA, followed by South Western and Trent RHAs. The Thames Regions have the lowest rates - North West Thames being the lowest in England. The differential between the highest and lowest rates is much less marked than for the younger age group. Again, these are based on small numbers of deaths.

27. The pattern for the elderly is somewhat similar to that for the under 15s, with the highest death rates being in Northern and North Western regions, followed by West Midlands and East Anglian RHAs, and the lowest being in South West Thames. The highest rate is about one and a half times that of the lowest rate.

28. Figure 14 shows trends over time in mortality rates from accidents for those aged over 65 years in the different regions. In all areas of England rates show evidence of a decline, though there are notable variations from one region to another.

Socio-economic Variations

29. Table (A) taken from the General Household Survey (1987-9) shows that for women there is very little difference in the percentage who had an accident in the 3 months prior to interview between manual and non-manual groups (classified by husband's occupation), whereas for men aged 16-44 there is a clear excess of accidents in the manual group. The accompanying table (B) suggests that much of this excess is due to occupational accidents. The latest available Childhood Supplement on Occupational Mortality (1979-80, 1982-83) showed low levels of mortality in non-manual groups and high levels in manual groups, as had previous Decennial Supplements. Since then however, accidental deaths in children have fallen to little more than half their level of around 1980, and the social class pattern may have changed.

HIV/AIDS AND SEXUAL HEALTH KEY AREA

Gonorrhoea Incidence

30. Incidence rates in both sexes and all age groups have fallen dramatically over the past 12 years. Incidence rates have always been higher among males than females (see Figure 15). The rate for males was nearly twice as high as that for females in 1981, and while both have shown a sharp absolute decline, the relative

difference between them has remained much the same. Rates for all age groups have fallen - most markedly in the years 1986 to 1988 (see Figure 17). The disease is most common among young people, peaking at age 20-24 (though in 1993, the 16-19 age group had just overtaken the 20-24 year olds). Hardly any cases are registered above age 45.

Teenage Pregnancy

Regional Variations

31. Conceptions data analysed by regional health authority is shown at Figure 17. Within regions, the highest conception rates amongst under 16s occur in London and the North in inner city and deprived areas with high rates of unemployment. Health authorities with the highest conceptions figures include Hull, Manchester, Barnsley, West Lambeth and Camberwell. See map at Figure 18.

Socio-economic Variations

32. Research into teenage pregnancy shows that teenage mothers are more likely to come from lower socio-economic groups. This is backed up by data from OPCS on all live births within marriage, where socio-economic group is classified by occupation of the father. This shows that in England and Wales in 1992, the percentage of births to mothers aged under 20 was highest in the lowest social classes, and lowest in the highest social classes (see Figure 18). The percentage of births aged under 20 in social classes IV and V combined was more than 5 times higher than that in classes I and II combined. Conversely, the percentage of mothers aged 30 or over in the highest social classes was nearly one and a half times that in the lowest.

Under-age abortions

33. Figure 19 shows age-specific abortion rates for England and Wales over the past 22 years. Rates in all ages increased during this period - the fastest rises were in the age groups 20-24 and 16-19.

AIDS and HIV

34. The number of AIDS cases reported each year is increasing throughout the UK (see Figure 20a). The proportion of AIDS cases from the three areas (Thames regions, rest of England/Wales/N.Ireland, and Scotland) has remained fairly constant since 1988. The HIV antibody test became generally available in 1985, and more cases of HIV infection had been diagnosed in the UK outside the Thames regions by the end of that year than in any subsequent year, as many people came forward for testing. The decline in the number of HIV infections diagnosed and

reported each year continued until the end of the 1980s, but since then the numbers have stabilised or increased slightly (Figure 20b).

CANCERS

Lung Cancer

Background

35. Primary lung cancer is the commonest form of malignant disease in the Western world. In England there are approximately 34,000 new cases per year.

Gender Variations

36. The graph (Figure 21) illustrates divergent trends in lung cancer mortality for most of the last twenty years, with falling rates in men throughout this period contrasting with rising rates in women (until the late 1980s). The male:female mortality ratio for this disease has accordingly fallen from about 5 in the early 1970s to about 2.5 in the early 1990s. These trends reflect differential rates of cigarette smoking between the sexes.

Socio-economic Variations

37. The attached tables indicate a marked gradient in both lung cancer incidence (Table C) and mortality (Table D). The gradient is somewhat steeper for mortality than for incidence. The higher prevalence of cigarette consumption (Table E) in the lower social classes - the pattern illustrated for 1992 having persisted for many years - is consistent with the higher occurrence of the disease seen in lower social classes.

Breast Cancer

Background

38. Breast cancer is a major health problem. It causes about 20% of cancer deaths and 5% of all deaths in women. In 1992 nearly 14,000 women in England and Wales died of the disease. The most important prognostic indicator is stage at diagnosis. Survival figures for England and Wales show an average 5 year survival rate for stage 1 disease of 84% falling to 18% for stage 4 disease. Reduction in death and disability from the disease, and reaching the Health of the Nation target of a 25% reduction in deaths from those invited for screening, will rely heavily upon the ability of the screening programme to detect early disease.

Regional variations

39. The attached chart (Figure 22) indicates regional variation in breast cancer registrations and mortality. The registration pattern is unusual for cancers in that several health authorities - such as East Anglia and Oxford - which for most cancers have relatively low rates, have above average registration rates for breast cancer. The difference is only observed in post menopausal women. The reason for this is not clear, but may be associated with reproductive status. There is a positive association between late childbearing and nulliparity and breast cancer. In younger women genetic predisposition may be a more significant factor than reproductive status. With respect to mortality there is relatively little variation around the England and Wales average, however the lowest rates are found in Northern and Yorkshire Regional Health Authorities, again contrary to the pattern for many other cancers. There is also considerable regional variation in screening uptake: ranging from around 75% in North West Thames and North East Thames to levels approaching 90% in Trent and East Anglia.

Ethnic Variations

40. There is considerable variation between ethnic groups in the proportion of women who said that they had been screened for breast cancer. This proportion was lower amongst South Asian women than in other groups.

Socio-economic Variations

41. Breast cancer is unusual in that higher incidence and mortality are found in the higher social classes (see Figure 23). This may be related to social class variation in some of the major risk factors for breast cancer such as late child bearing, nulliparity and early menarche.

Malignant Melanoma

42. The pattern of mortality - and morbidity - for malignant melanoma is rather different to the majority of cancers. With respect to regional variation, cancer registrations for 1989 show highest rates in the South West and Wessex with lowest rates in the Northern region (Table F). Social class differences in incidence (Table G) and mortality (Table H), with more frequent occurence in the higher social classes, are clearly present for males but rather less marked amongst females. Mortality data by country of birth indicates lower than average mortality from this disease amongst those born in the Indian sub-continent and Caribbean and African commonwealth (Table I).

Cervical Cancer

Regional Variations

43. Considerable regional variation exists for mortality from cervical cancer with highest rates occurring in Mersey region and lowest rates in South West Thames (Table J). Incidence data (Table K) also indicate high rates in Mersey although there is some inconsistency between the regional rankings for mortality and incidence. There is also considerable regional variation in screening uptake - ranging from a little over 60% in North West Thames and North East Thames to almost 80% in Trent and East Anglia.

Socio-economic Variations

44. Variation between the social classes in mortality (Table L) and incidence (Table M) for this disease is marked, with highest occurence among those from the lower social classes.

Ethnic Variations

45. Although some variation is apparent according to country of birth, numbers tend to be small and there is some inconsistency between mortality (Table N) and incidence (Table O) data. There is variation amongst different ethnic groups in the proportion who report having had a cervical smear test in the previous year: this proportion is lower amongst Pakistani and Bangladeshi women than amongst other groups.

RISK FACTORS WHICH MAY BE APPLICABLE TO MORE THAN ONE KEY AREA

Smoking

Gender Variations

46. Twenty years ago, men were much more likely than women to be smokers: in 1972 52% of men in Great Britain compared with 41% of women, smoked cigarettes (Figure 24). The difference in the prevalence between genders in 1972 was greatest among those aged 60 and over. Since then, however, the difference in cigarette smoking prevalence between men and women has narrowed, and by 1992, when 29% of men and 28% of women were cigarette smokers, it had virtually disappeared. This change in the relative proportions of men and women smoking results from a combination of two factors. First, smoking became common among men several decades earlier than it did for women, and secondly, men are more likely to have given up smoking.

Socio-economic Variations

47. The prevalence of cigarette smoking in England fell for all socio-economic groups between 1974 and 1992. Cigarette smoking remains highest among the manual groups and it is among these that prevalence has fallen the least. The largest change in smoking habits has been among the professional, employers and managers, intermediate and junior non-manual groups and skilled manual and non-account non-professionals, where prevalence has fallen by more than a third since 1974.

48. Figure 25 shows that prevalence rates for professional, employers and managers, and intermediate and junior non-manual in 1990 were significantly lower than those for England. The remaining groups are significantly higher than those for England. The socio-economic group corresponds to the present job of those currently working and to the last job of those not currently working. Married women whose husbands were in the household are classified according to their husband's occupation.

Diet, Physical Activity and Nutritional Status

49. Figure 26 shows that amongst both men and women the proportion of those who are overweight or obese has increased since 1980. This is likely to reflect two main factors: food intake and physical activity levels. Figure 27 demonstrates that the percentage of food energy from fat has decreased little since the early 1980s, though percentage of food energy from saturated fatty acids has shown some decline. Long term trend data on physical activity are not available, though Figures 28 and 29 show that men tend to be more active than women and that amongst the latter vigorous physical activity declines with decreasing social class (the reverse is true amongst men).

Alcohol

50. Figure 30 shows that in women alcohol consumption above the recommended sensible limit is less common with decreasing socio-economic group, whereas amongst men there is no simple relationship with alcohol consumption. Amongst both men and women there has been a slight increase in the proportion of individuals drinking above the sensible levels since the mid-1980s.

Birth Weight and Infant Mortality

51. It has been suggested that factors operating early in life may affect the predisposition to develop disease in adulthood. Figure 31 shows that, with some exceptions, the percentage of life births weighing less than 2,500 grams tends to be higher in Northern regions of England than in the South. Assuming that this is a valid indicator of the quality of intra-uterine and perinatal health, it could be

argued that such differences may contribute to the North/South gradient that is observed for some diseases.

52. Figure 32 shows that infant mortality rates have been decreasing over time in all social class groups.

SERVICE UPTAKE

53. Data on the utilisation of services need to be interpreted cautiously because it is difficult to be certain whether they reflect differences in incidence/prevalence, differences in access, differences in propensity to consult, or some combination of these. Nevertheless it is worth considering some data from the recently published report of the Fourth National Morbidity Survey from General Practice (MSGP4). This showed, for example, that men aged 16-44 were 20% more likely to consult for a serious illness if they came from social classes IV and V (as compared to social classes I and II after allowing for the effects of other socio-demographic variables). Black children and young adults were more likely to have consulted for a serious illness, and in general consultation rates were higher for people from the Indian Sub-Continent ethnic group than for white people (including consultations for preventive health care in general).

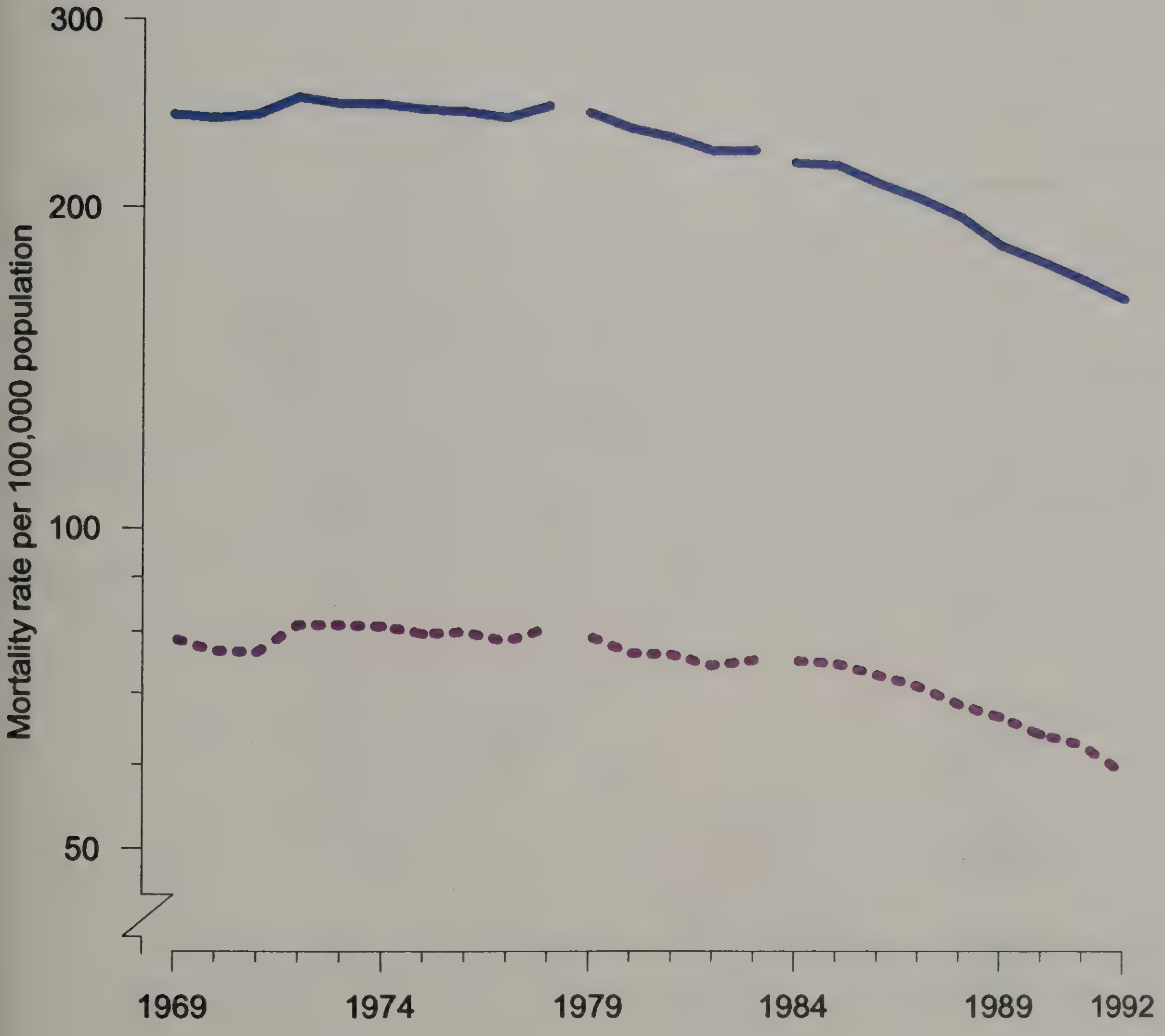
54. Data are also available from Hospital Episode Statistics, but these currently only provide age, sex and region routinely (though collection of data by ethnic group is just beginning).

55. Service uptake data for specific types of disorder are dealt with in the sections dealing with individual key areas where the relevant information is available.

Figure 1

Standardised Mortality Rates† for Coronary Heart Disease

by sex, under 75 years of age England 1969-1992*



† Rates are calculated using the European Standard Population.

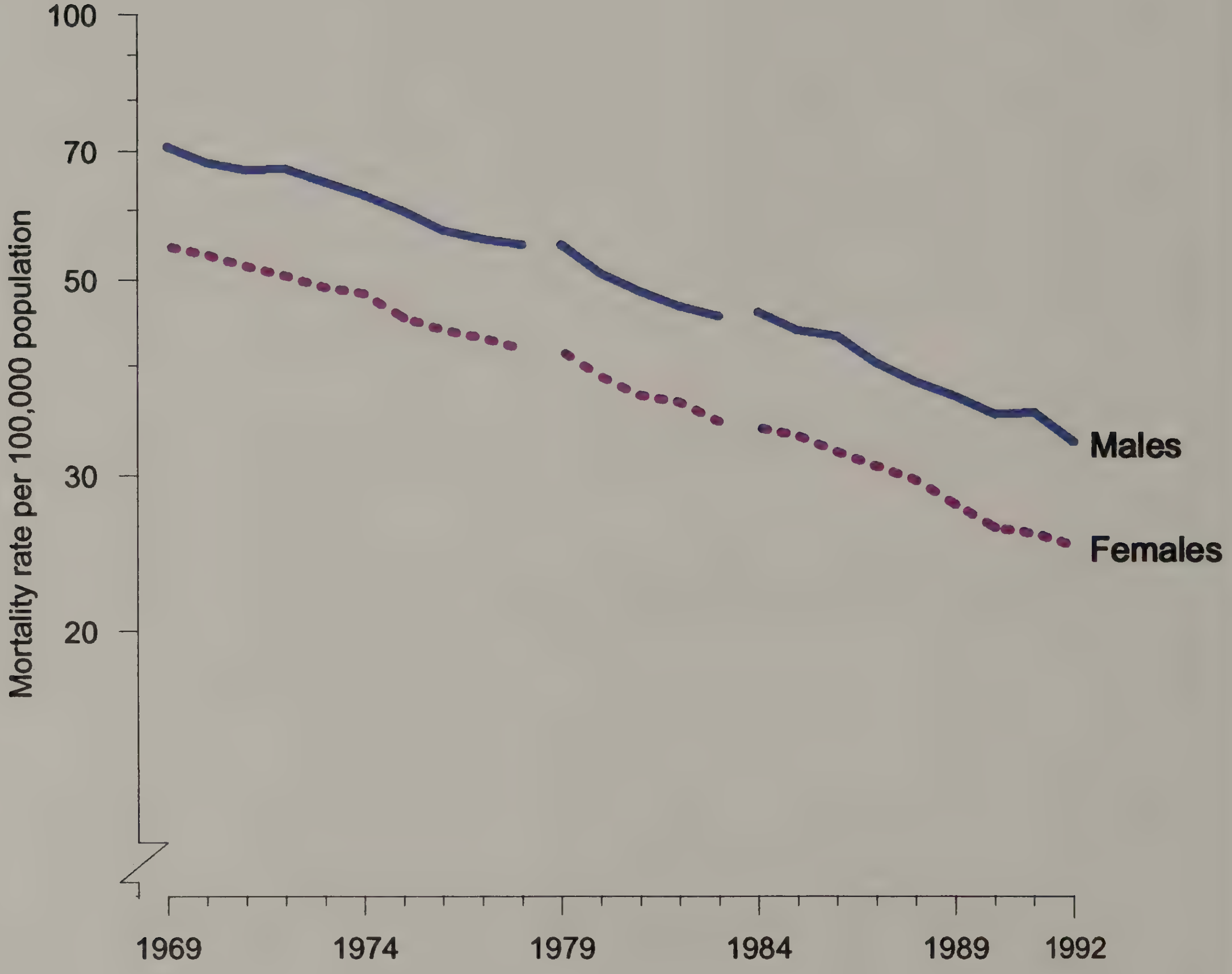
* Discontinuities in the data between 1978 and 1979 due to the change from ICD8 to ICD9 and between 1983 and 1984 due to a change in coding procedures may affect the comparability of data.

Source: OPCS

Figure 2

Standardised Mortality Rates† for Stroke

by sex, under 75 years of age England 1969-1992*



† Rates are calculated using the European Standard Population.

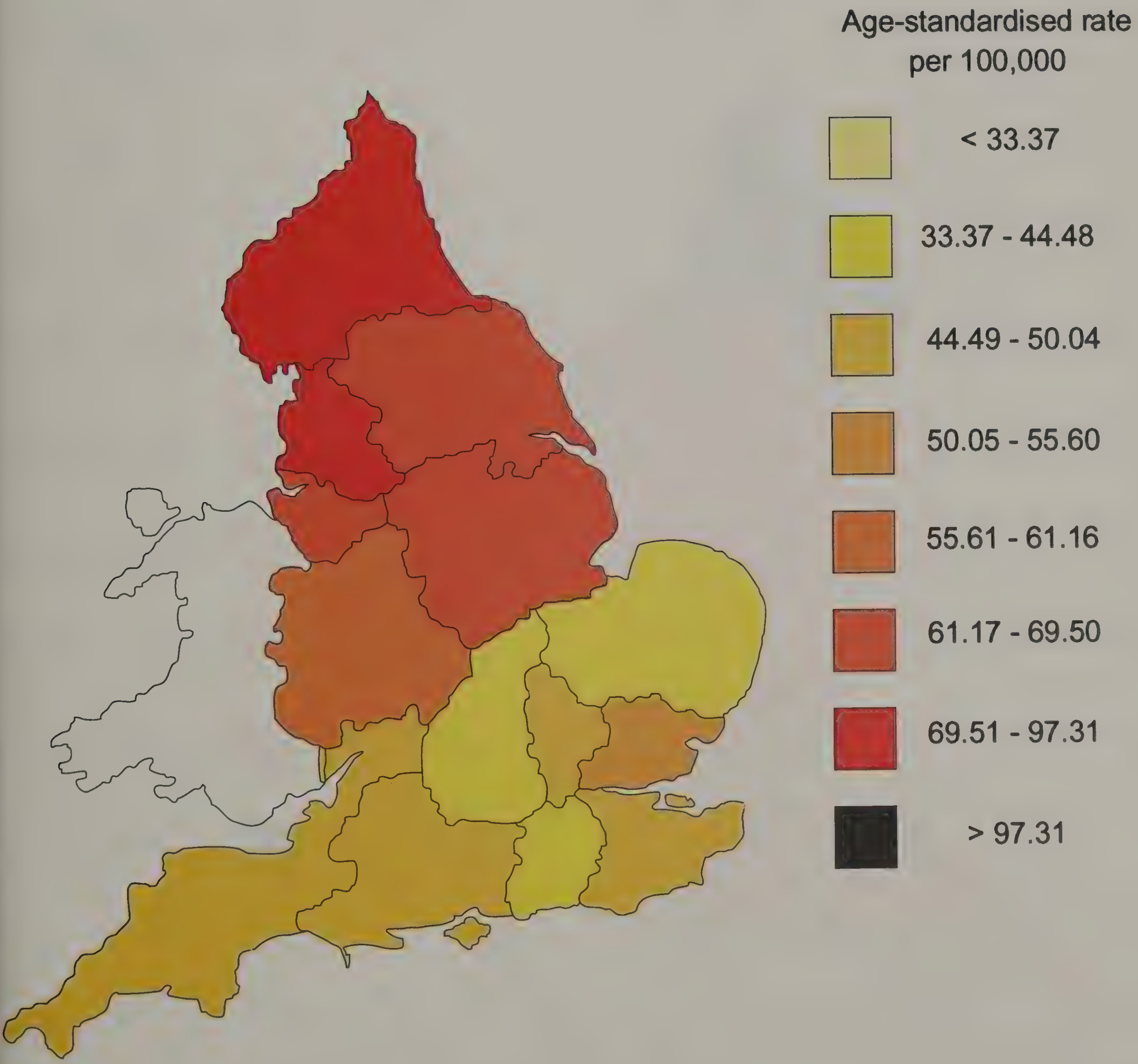
* Discontinuities in the data between 1978 and 1979 due to the change from ICD8 to ICD9 and between 1983 and 1984 due to a change in coding procedures may affect the comparability of data.

Source: OPCS

Figure 3a

Mortality rates from Coronary Heart Disease

by RHA, persons aged under 65 England 1990-92

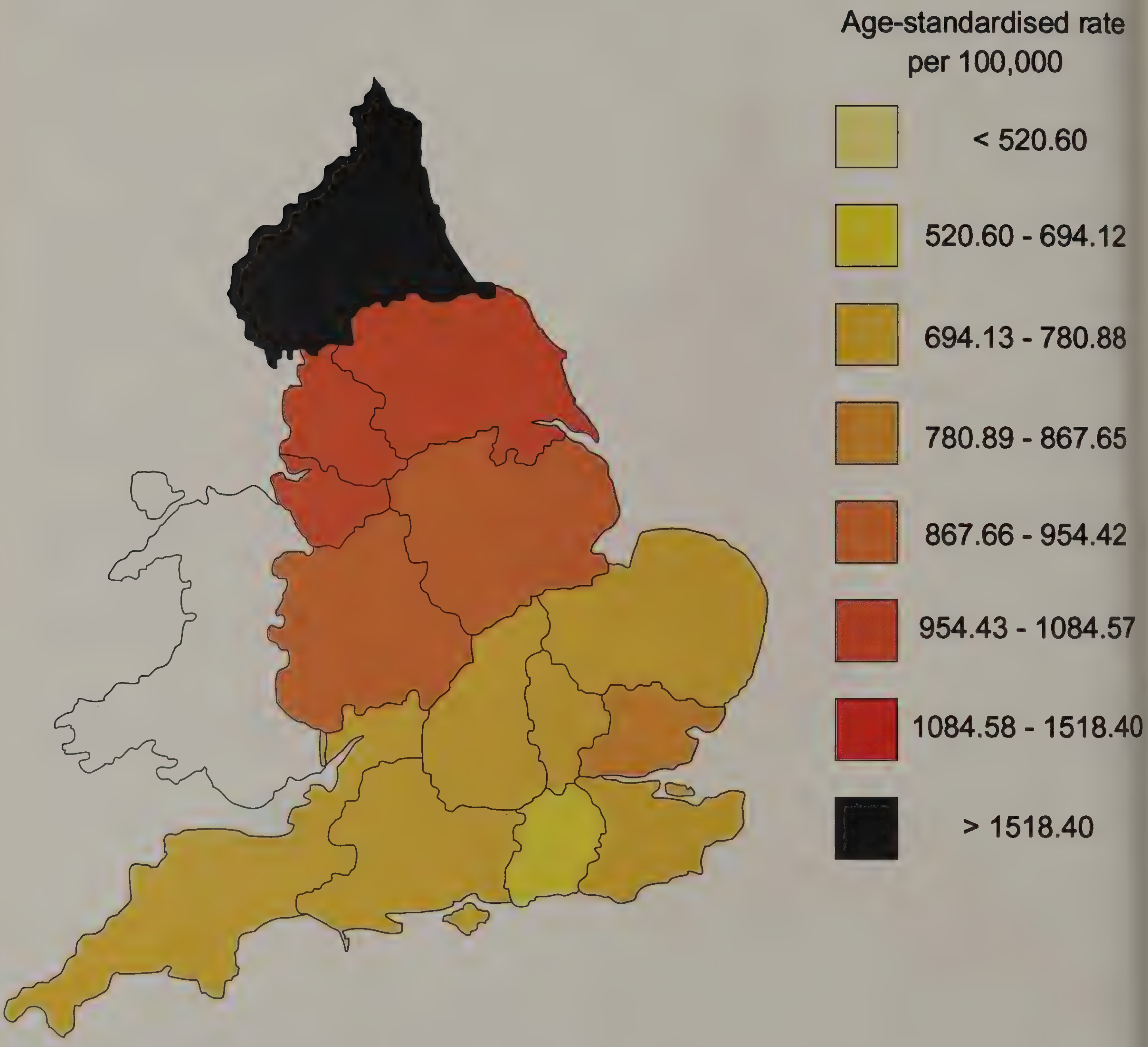


Source: Public Health Common Data Set 1993

Figure 3b

Mortality rates from Coronary Heart Disease

by RHA, persons aged 65-74 England 1990-92

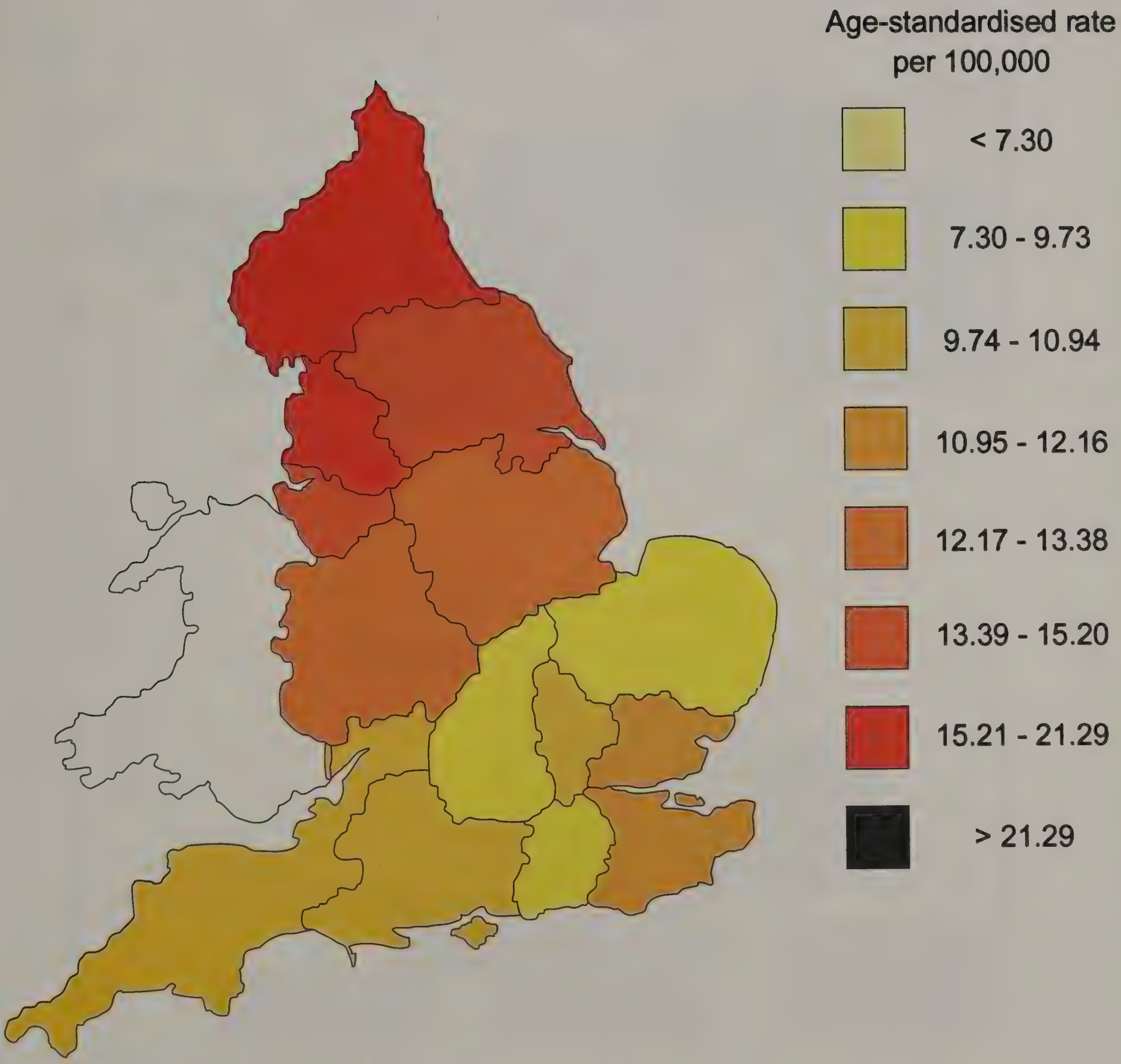


Source: Public Health Common Data Set 1993

Figure 3c

Mortality rates from Stroke

by RHA, persons aged under 65 England 1990-92



Source: Public Health Common Data Set 1993

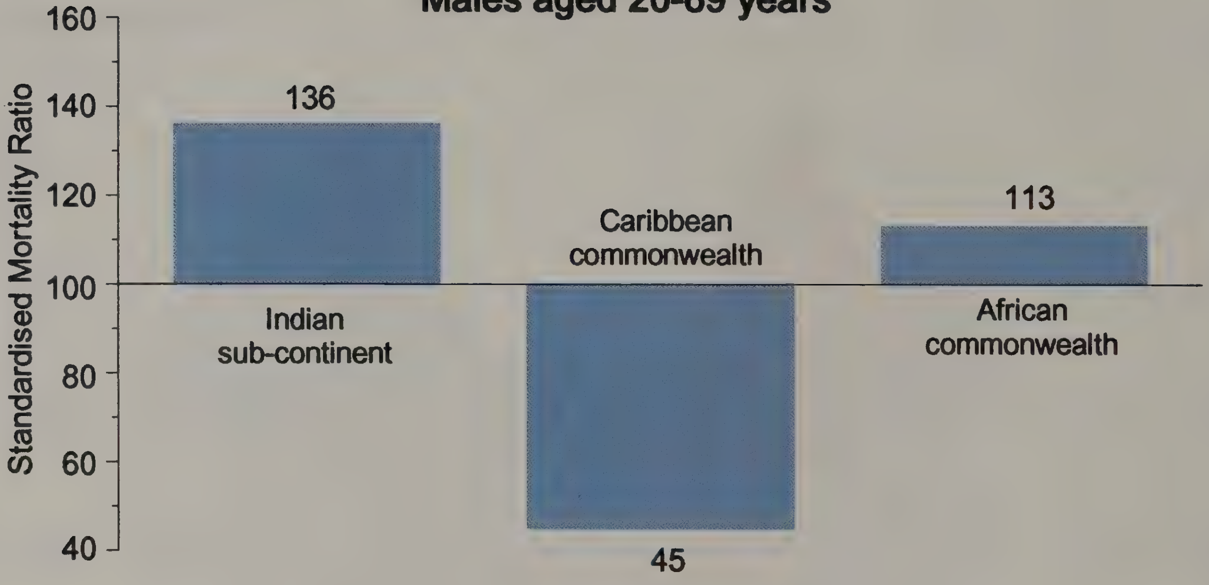
Figure 4a

Standardised Mortality Ratios for Coronary Heart Disease

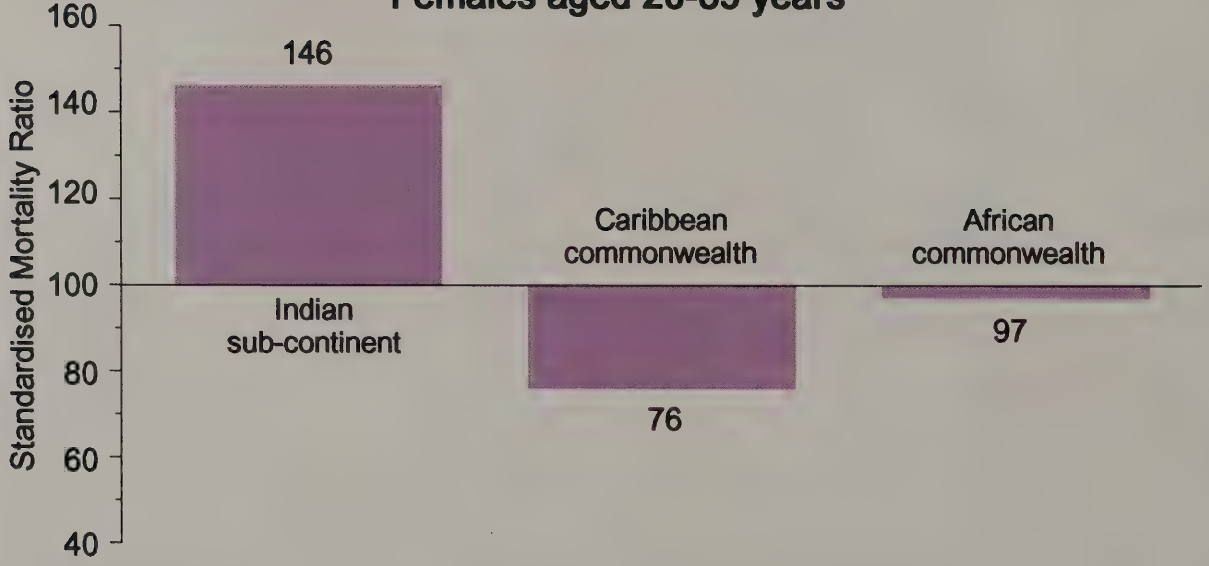
by sex and country of birth England and Wales 1979-83

SMR for England and Wales = 100

Males aged 20-69 years



Females aged 20-69 years



Source: Balarajan R. Ethnic differences in mortality from ischaemic heart disease and cerebrovascular disease in England and Wales. *BMJ* 1991; **302**: 560-4

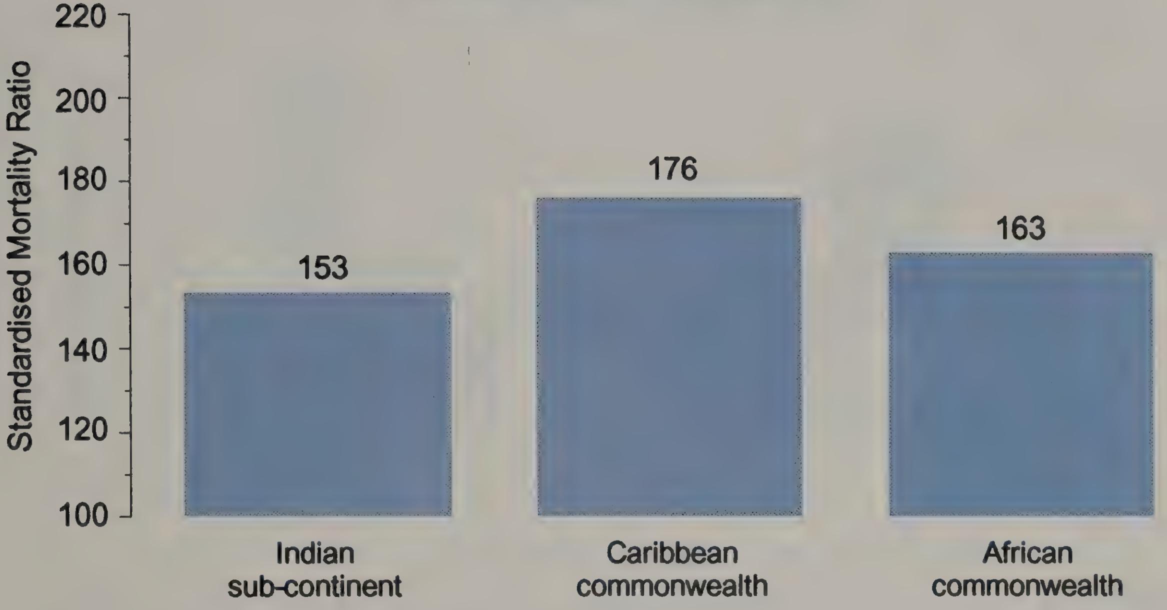
Figure 4b

Standardised Mortality Ratios for Stroke

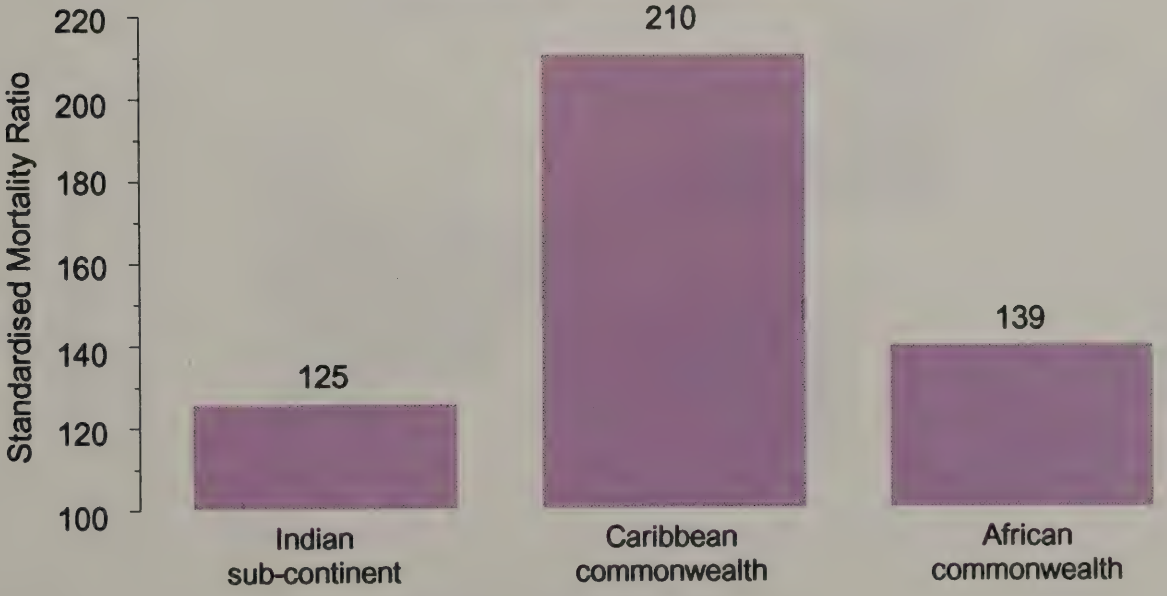
by sex and country of birth England and Wales 1979-83

SMR for England and Wales = 100

Males aged 20-69 years



Females aged 20-69 years



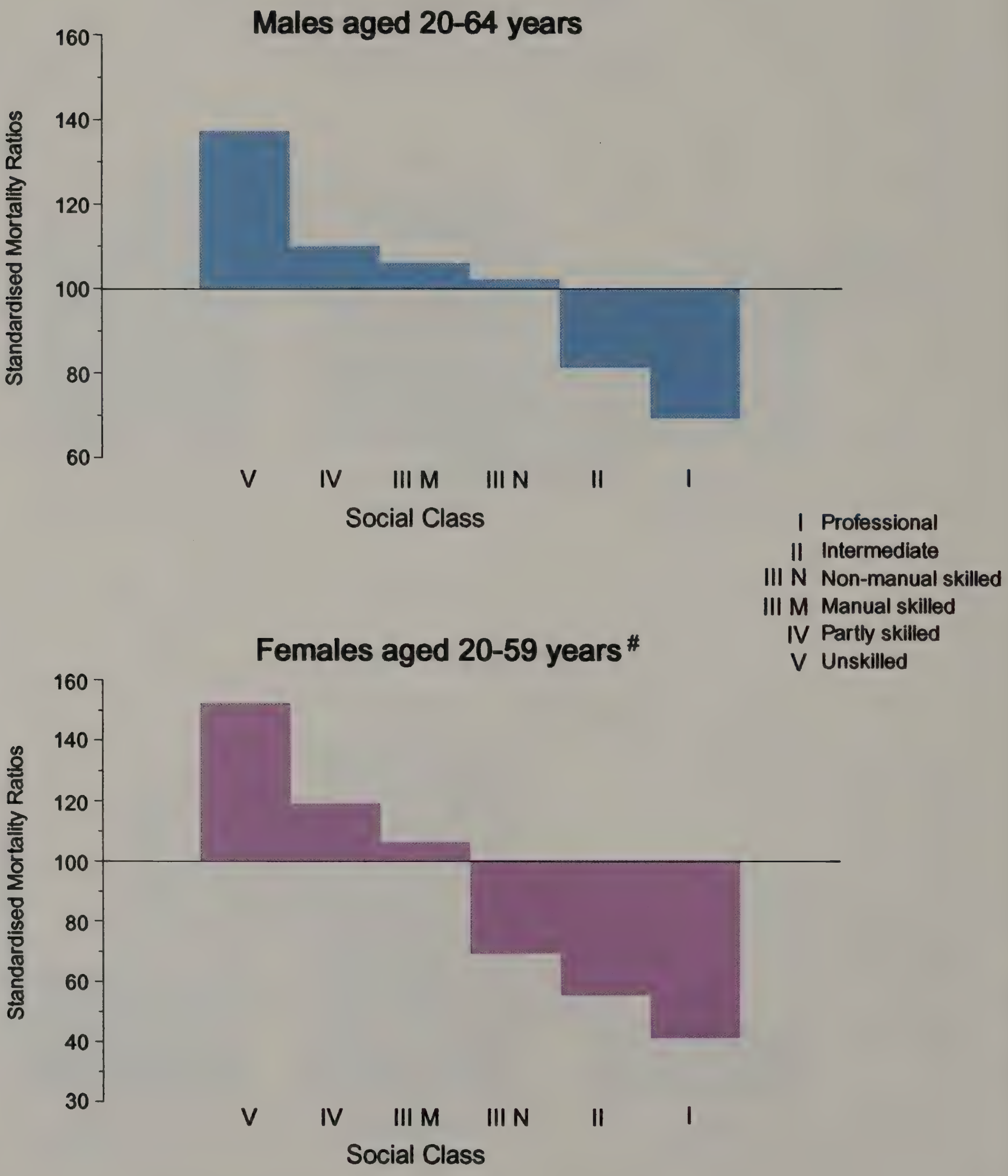
Source: Balarajan R. Ethnic differences in mortality from ischaemic heart disease and cerebrovascular disease in England and Wales. *BMJ* 1991; **302**: 560-4

Figure 5a

Standardised Mortality Ratios for Coronary Heart Disease

by sex and social class England and Wales 1979-80, 1982-83

SMR for England and Wales = 100



# Based on own or husband's occupation

Source: OPCS Occupational Mortality: Decennial Supplement

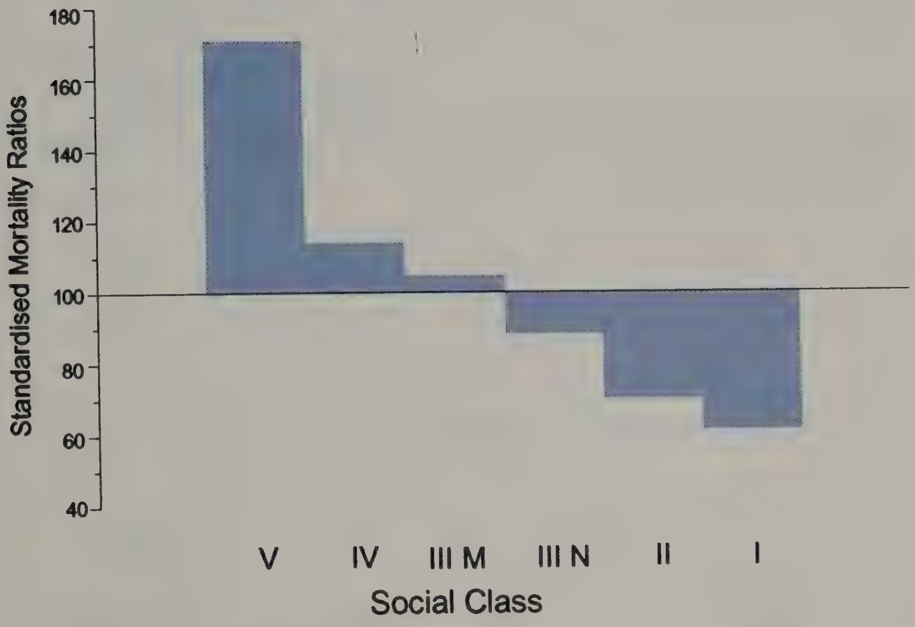
Figure 5b

Standardised Mortality Ratios for Stroke

by sex and social class England and Wales 1979-80, 1982-83

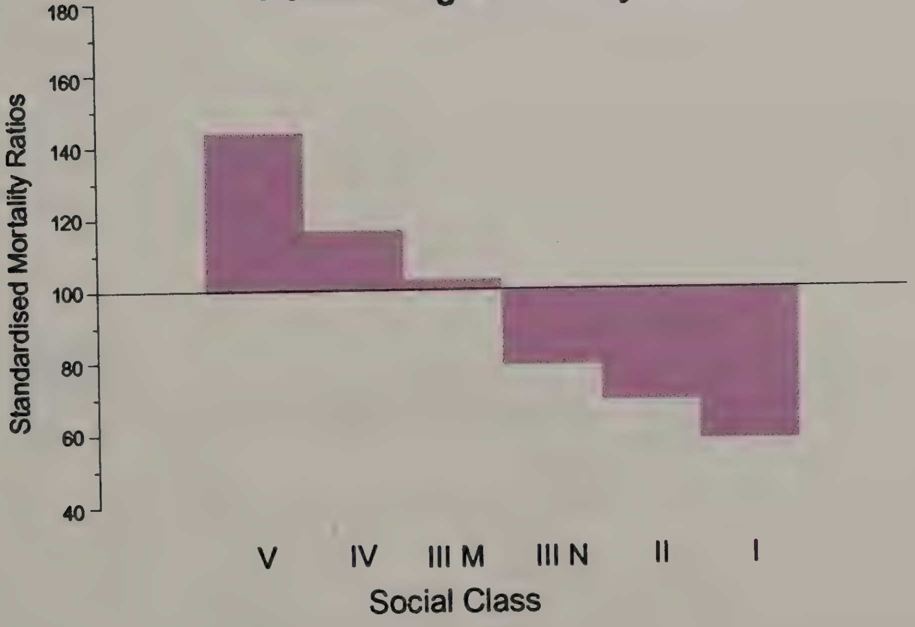
SMR for England and Wales = 100

Males aged 20-64 years



I Professional
II Intermediate
III N Non-manual skilled
III M Manual skilled
IV Partly skilled
V Unskilled

Females aged 20-59 years #



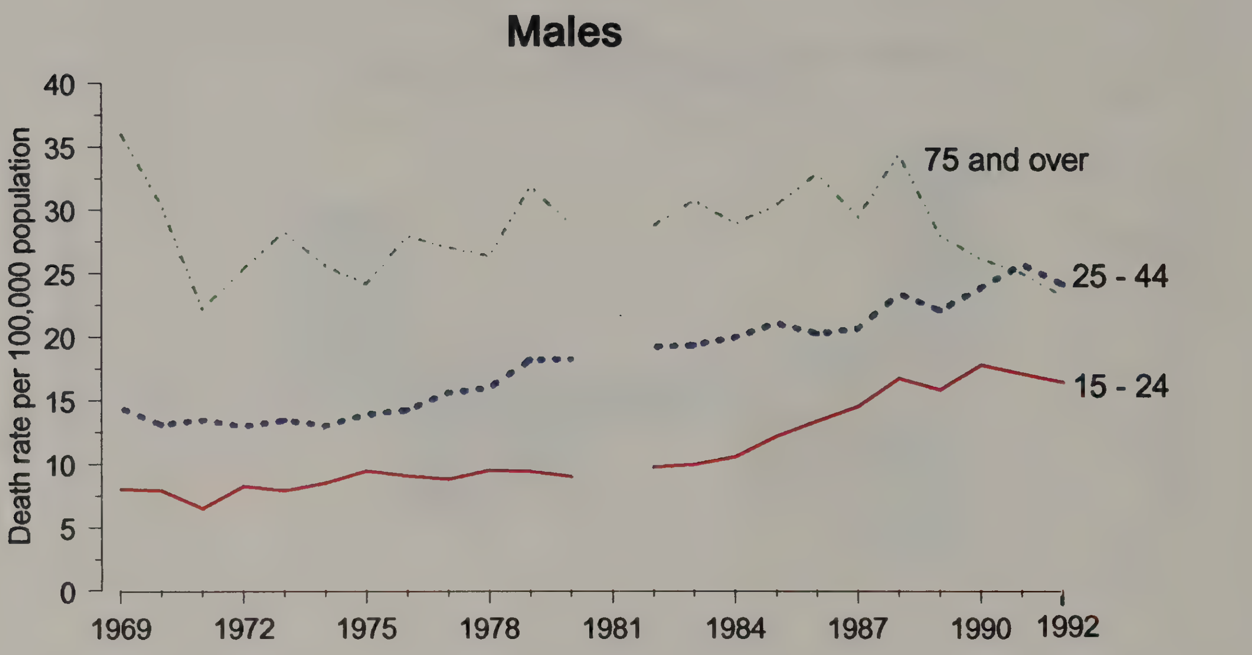
# Based on own or husband's occupation

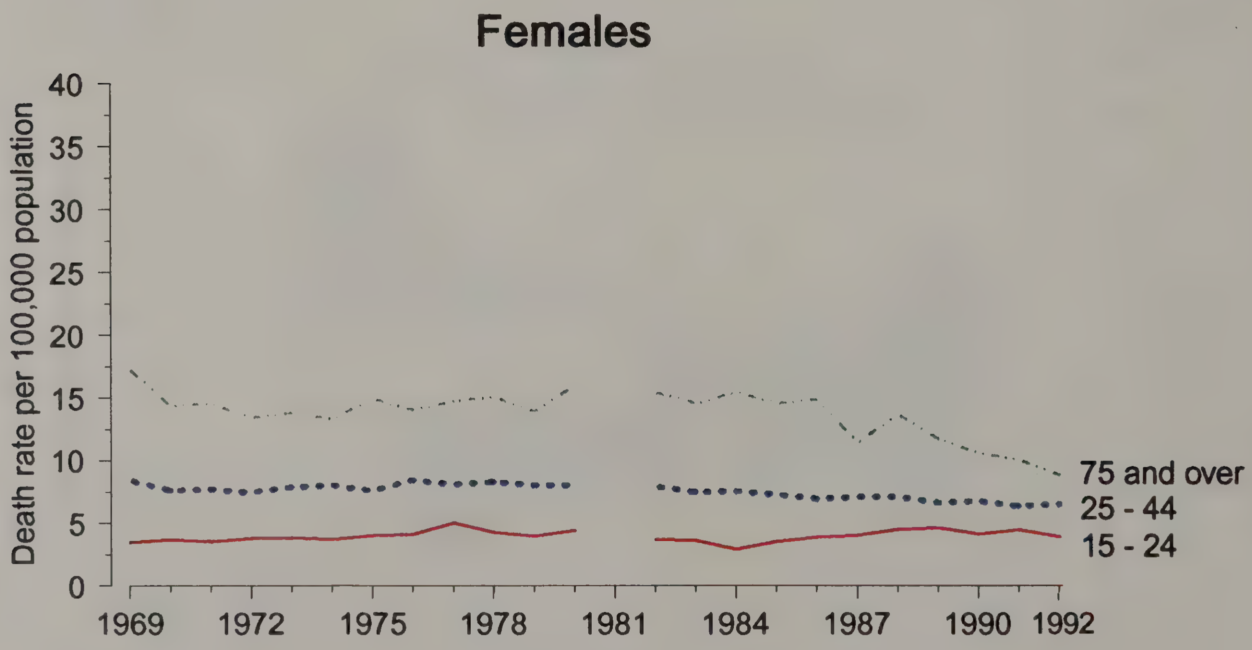
Source: OPCS Occupational Mortality: Decennial Supplement

Figure 6

Death rates for Suicide and Undetermined Injury

by sex and age England 1969-1992*





* Data for 1981 were affected by industrial action by registrars and are excluded

Source: OPCS (ICD E950:E959, E980:E989)

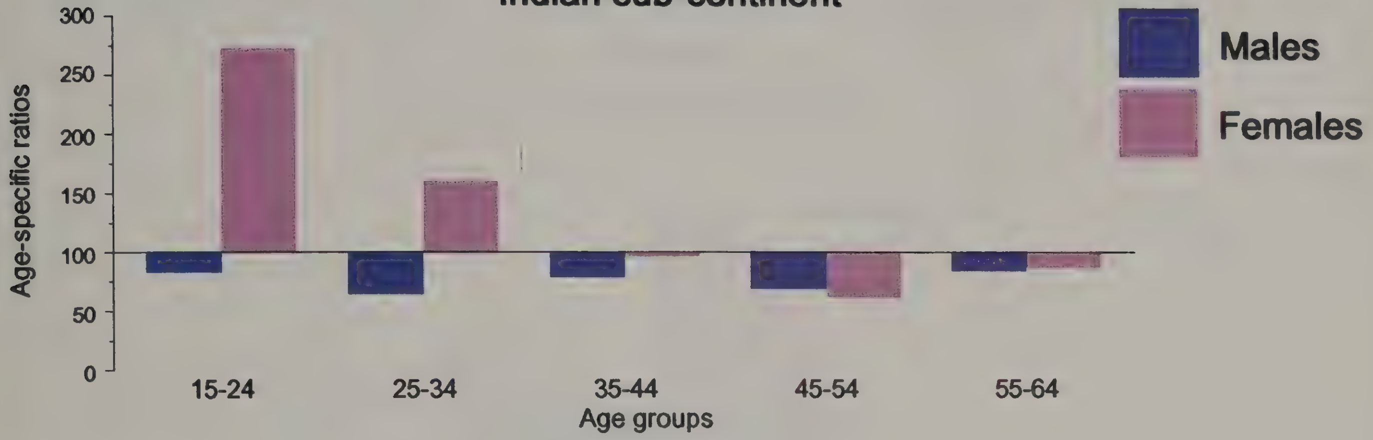
Figure 7

Age-specific Ratios for Suicides

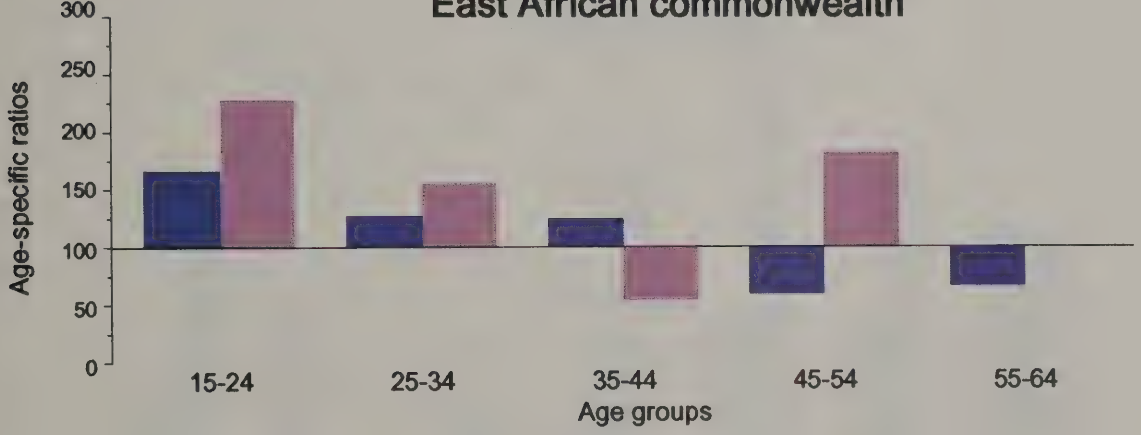
by sex, age and country of birth England and Wales 1979-83

England and Wales=100

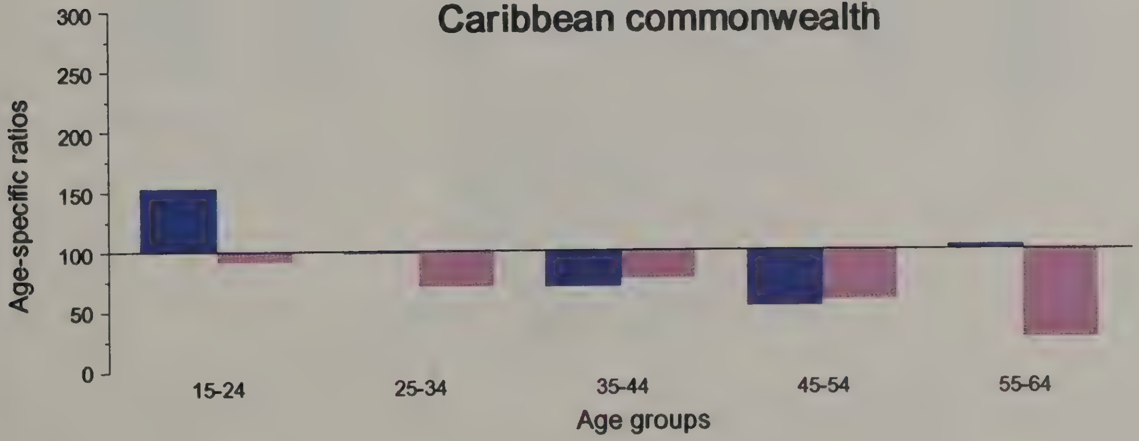
Indian sub-continent



East African commonwealth



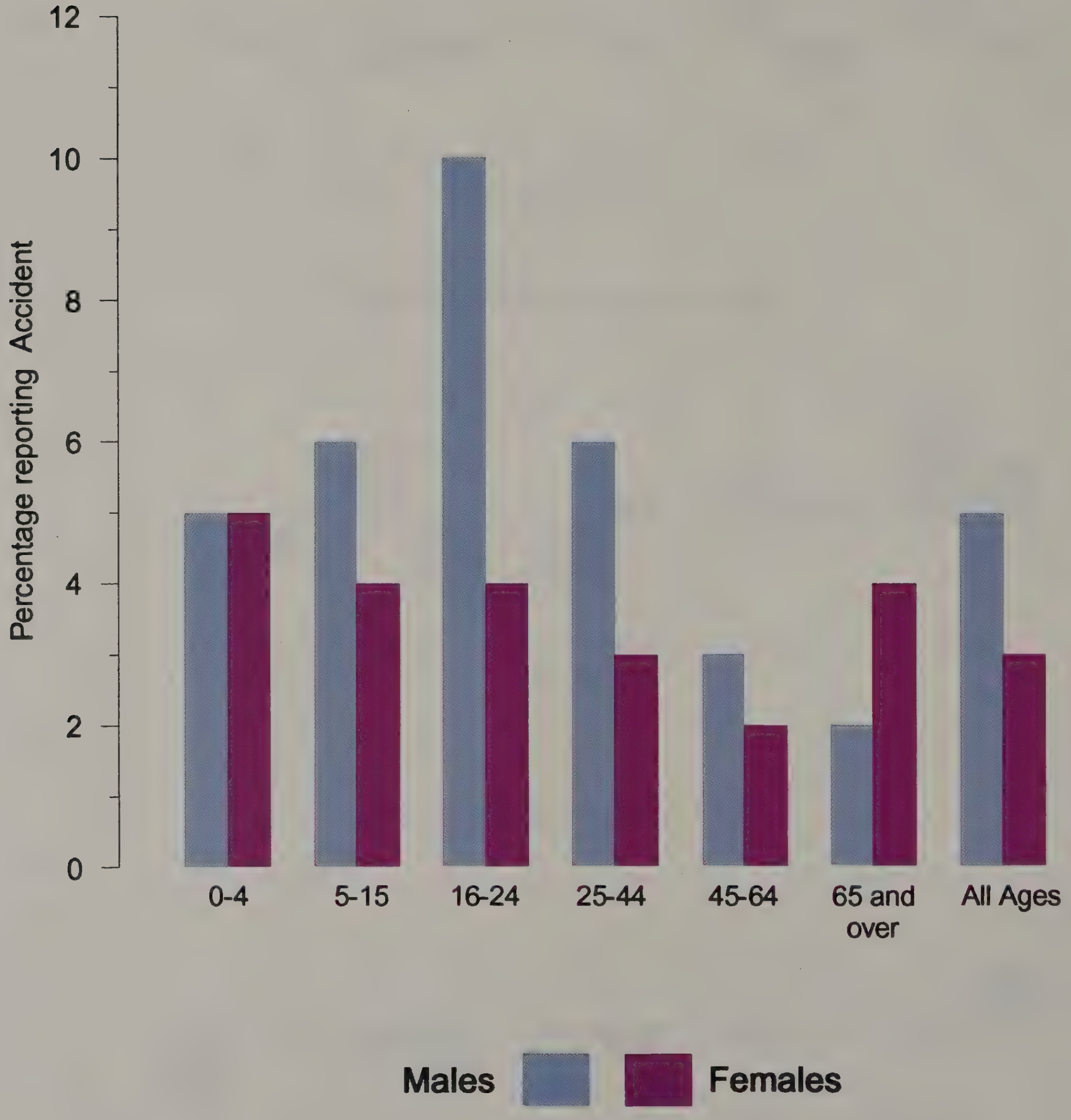
Caribbean commonwealth



Source: Balarajan R., Soni Raleigh V. Suicide and self-burning among Indians and West Indians in England and Wales. British Journal Psychiatry 1992;161:365-8.

Percentage of respondents who had an Accident in 3 months before interview

by sex and age Great Britain 1987-89 combined



Source: OPCS General Household Survey

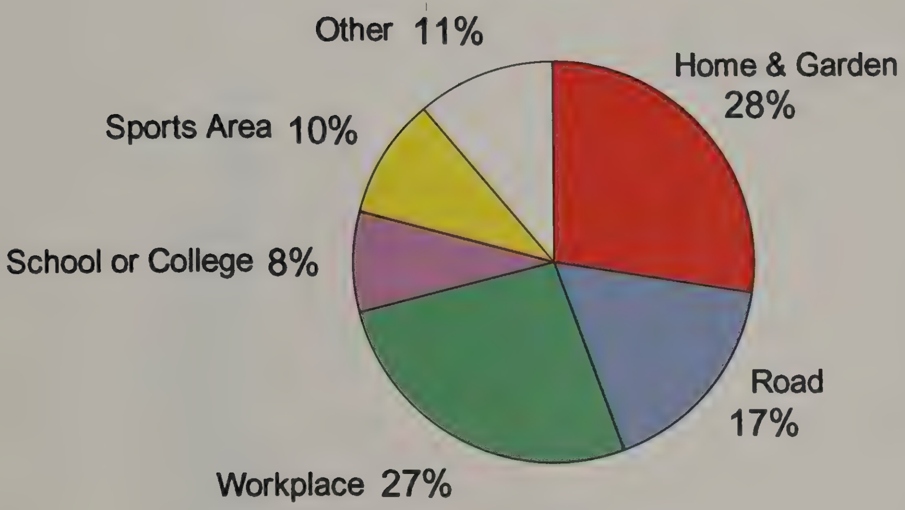
Figure 9

Location of Accidents

by sex Great Britain 1987-89 combined

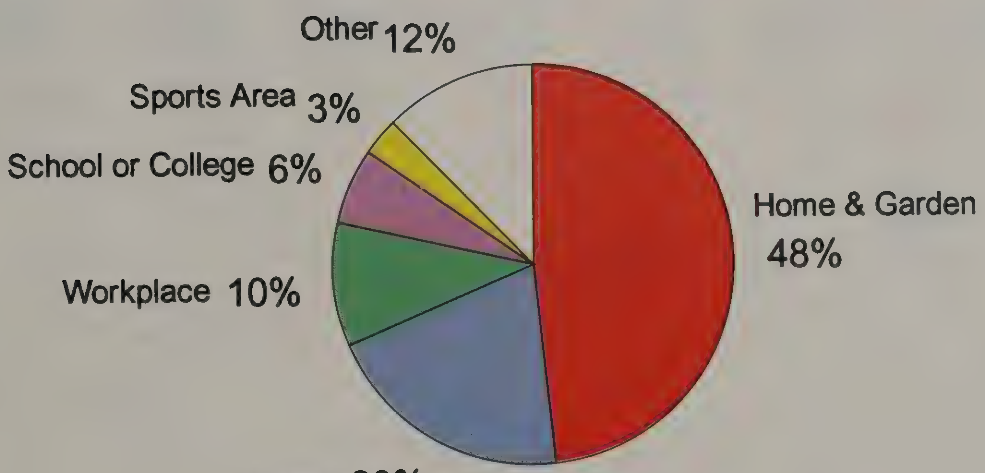
Males

Total Accidents = 1,895



Females

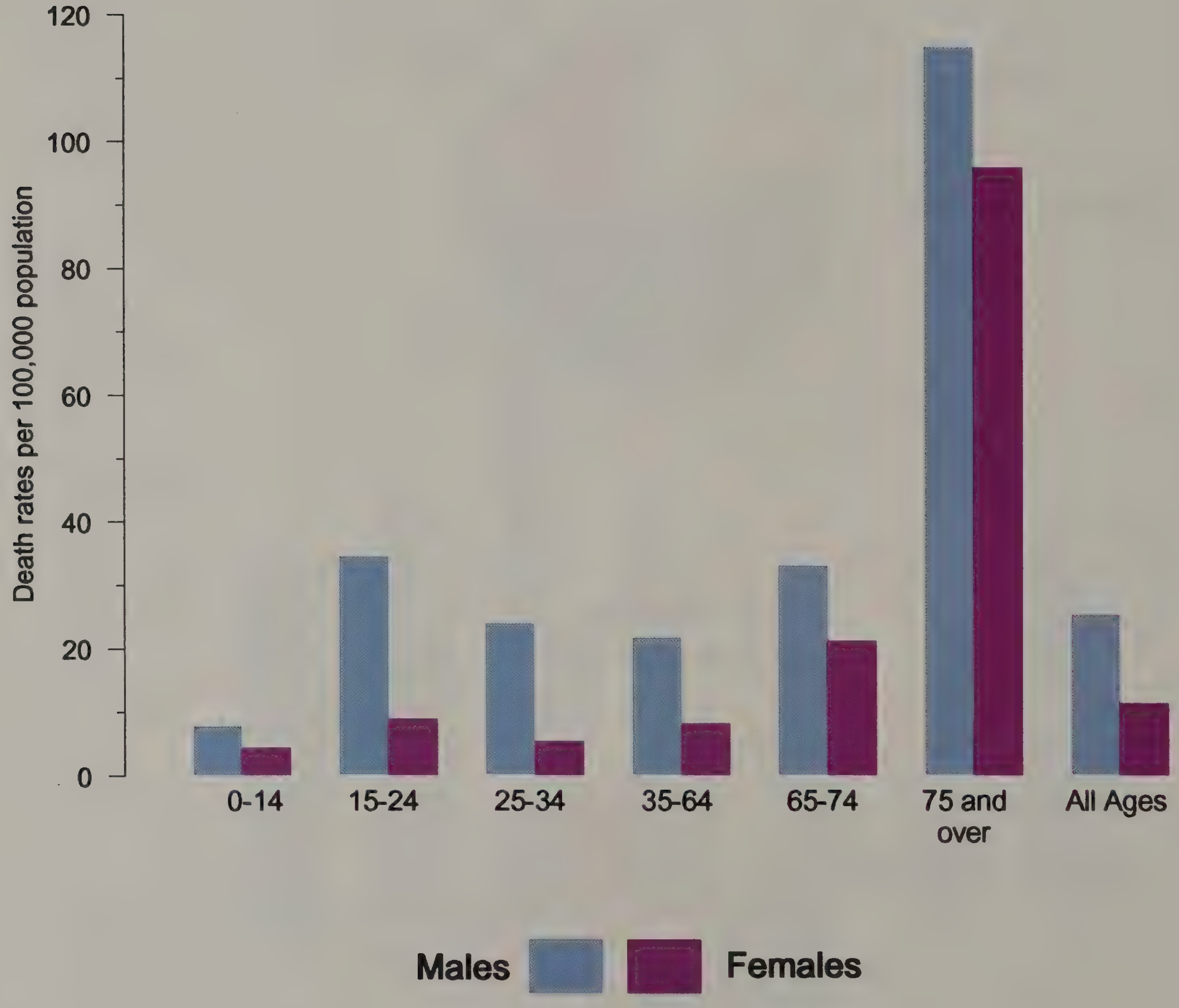
Total Accidents = 1,360



Source: OPCS General Household Survey

Standardised Mortality Rates* for Accidents

by sex and age England 1990-92 combined



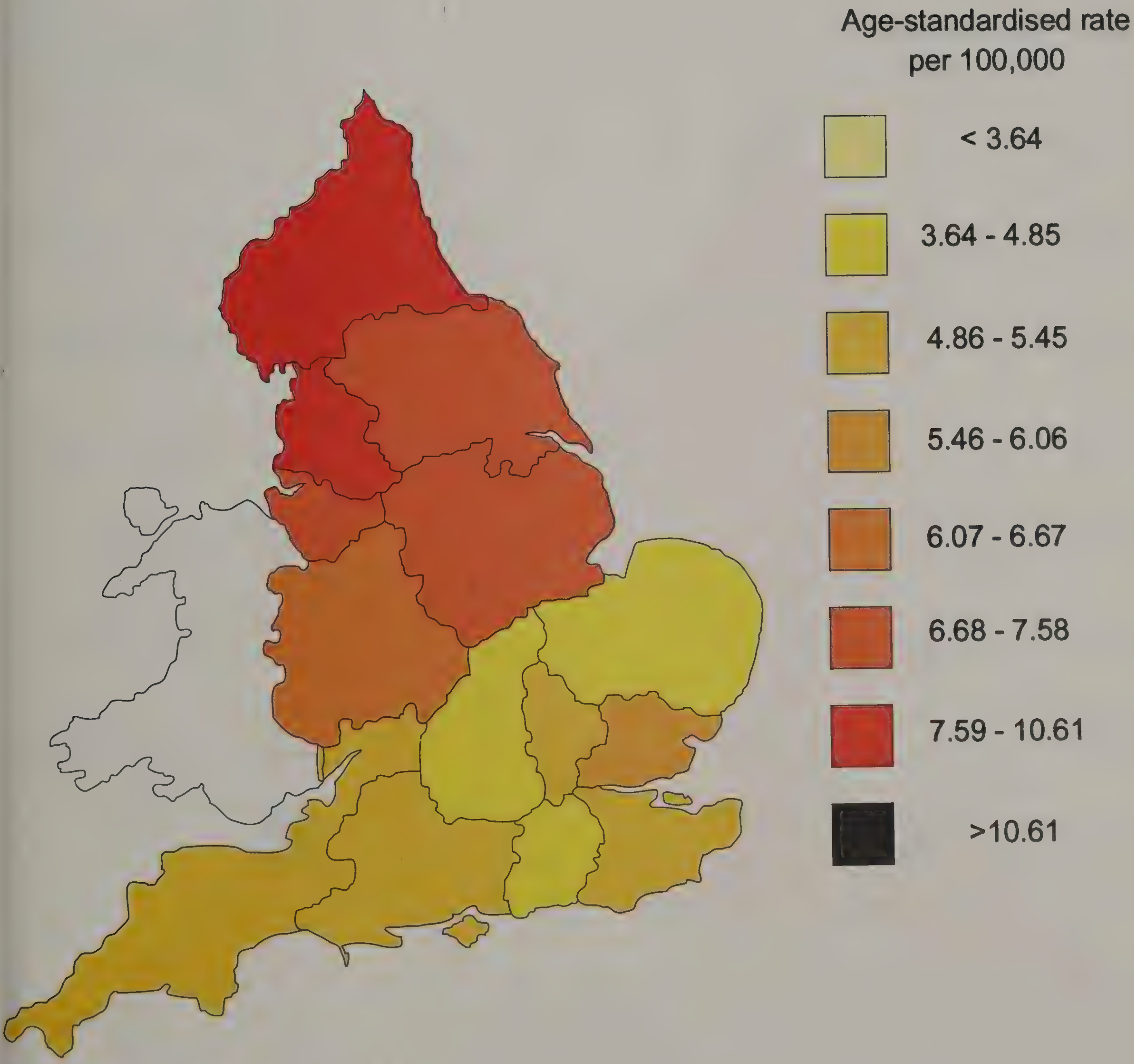
* Rates are calculated using the European Standard Population.

Source: OPCS

Figure 11

Mortality rates from Accidents

by RHA, children aged under 15 England 1990-92

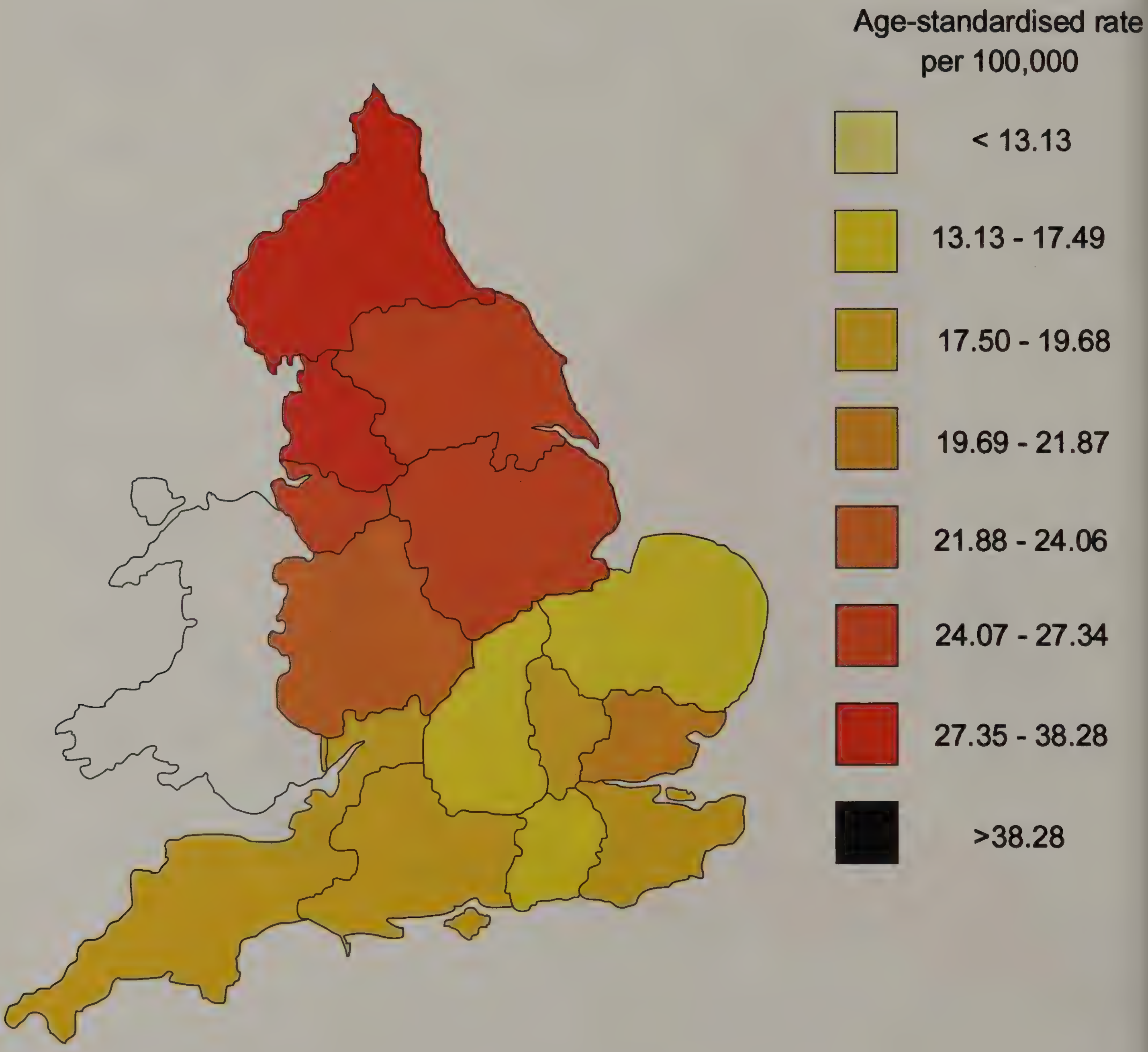


Source: Public Health Common Data Set 1993

Figure 12

Mortality rates from Accidents

by RHA, young persons aged 15-24 England 1990-92

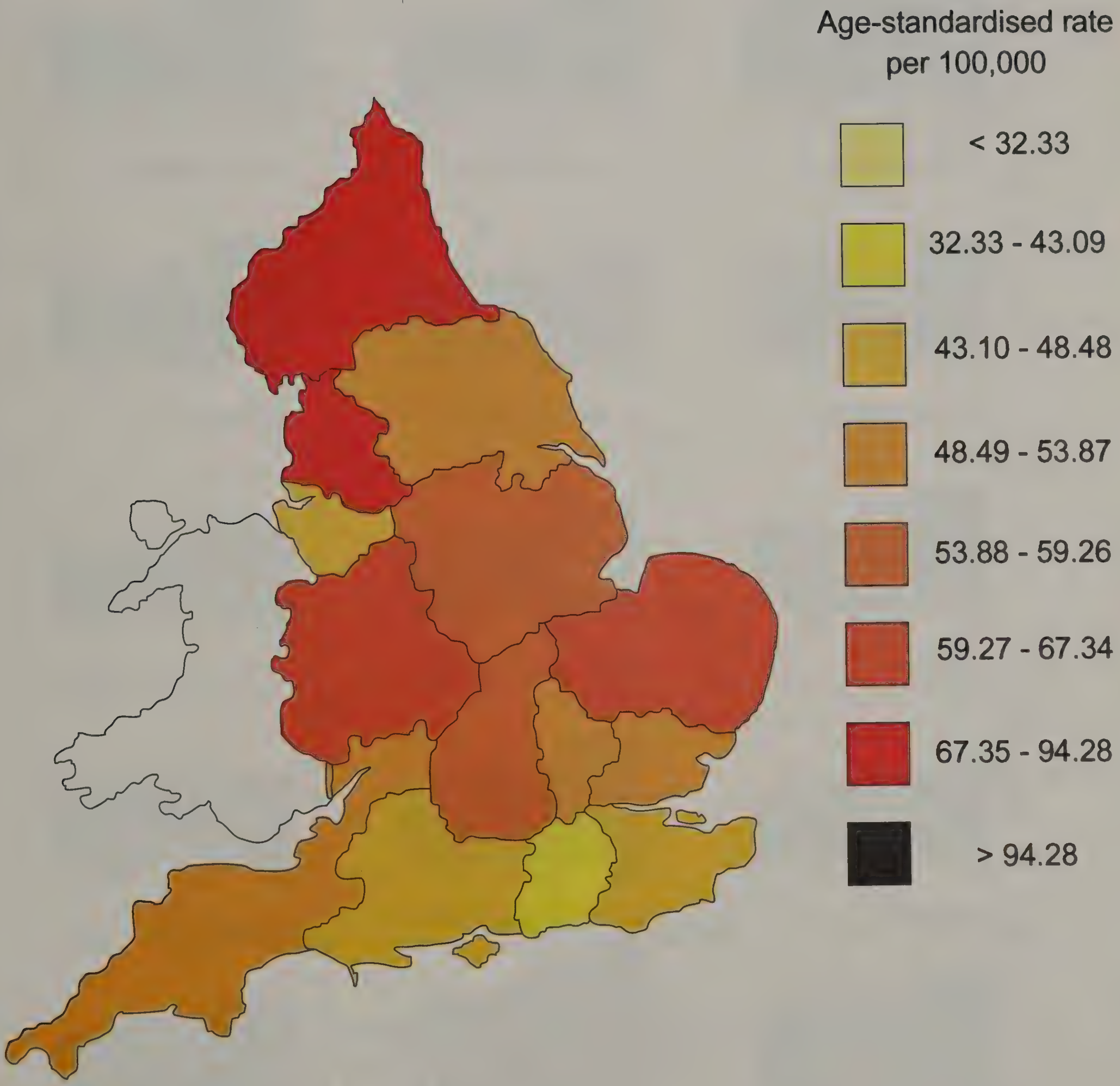


Source: Public Health Common Data Set 1993

Figure 13

Mortality rates from Accidents

by RHA, persons aged 65 and over England 1990-92

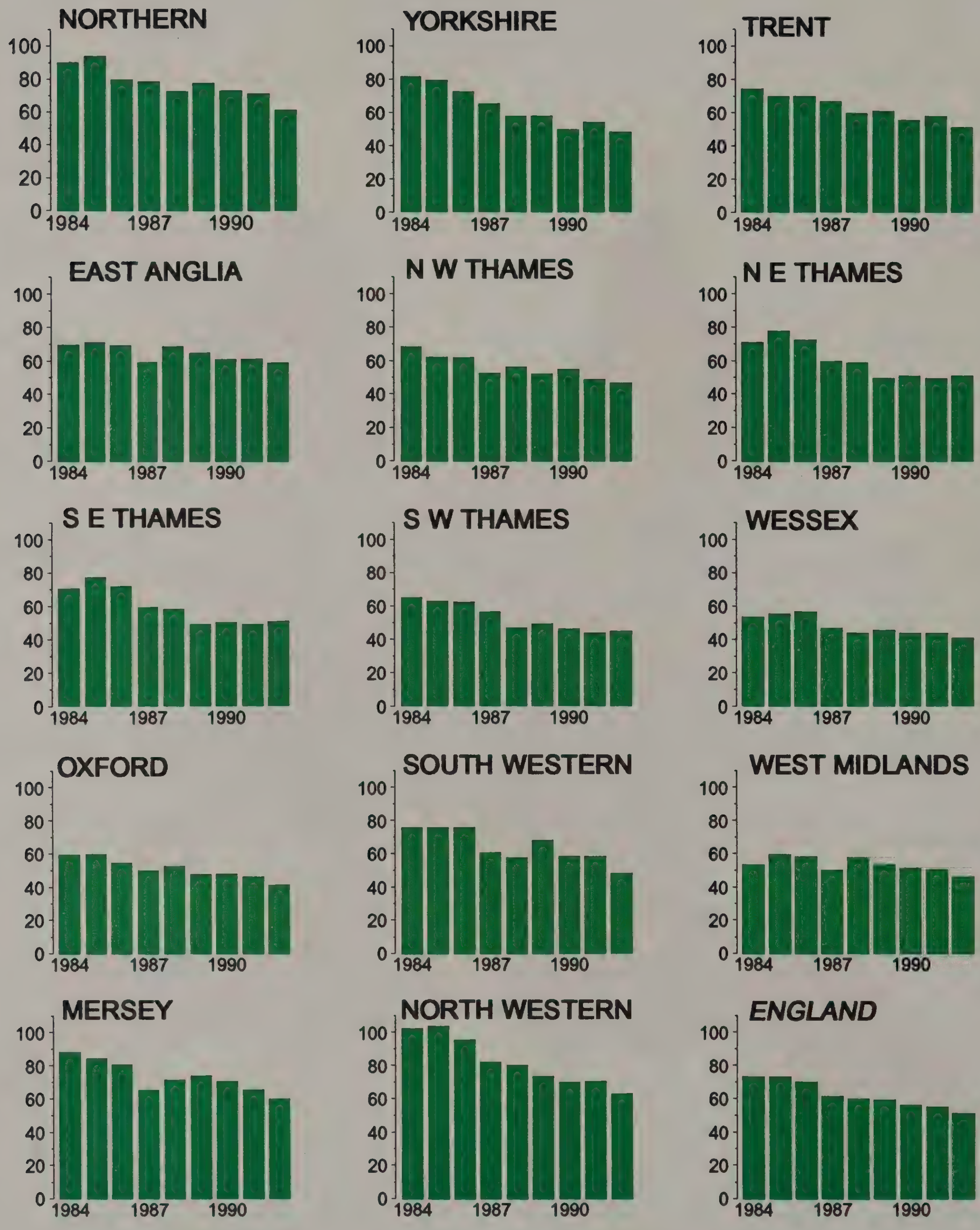


Source: Public Health Common Data Set 1993

Death rates from Accidents

by RHA England 1984 - 1992

Standardised death rates* per 100,000 population for persons aged 65 and over

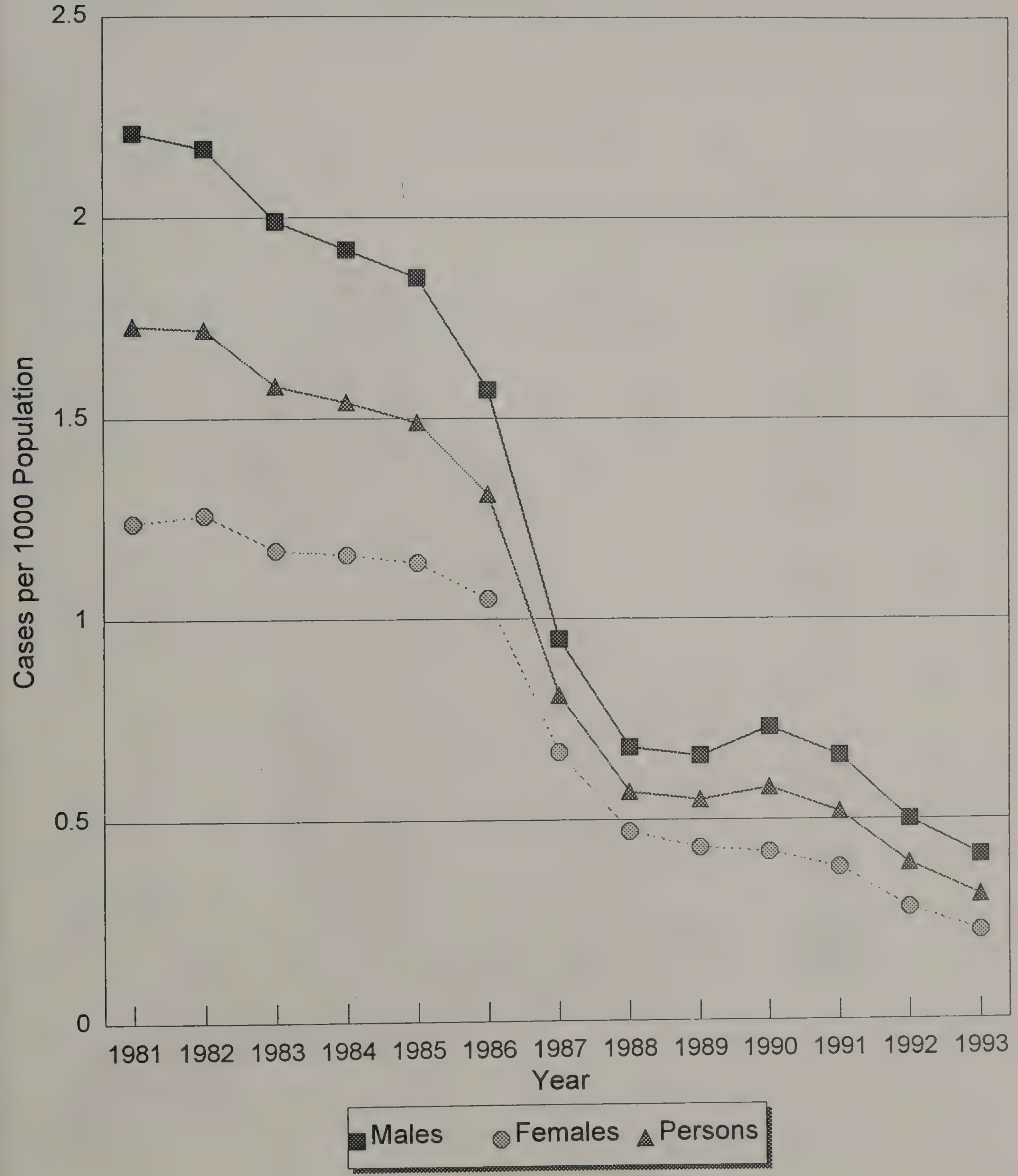


* Rates are calculated using the European Standard Population

Source: DH Public Health Common Data Set

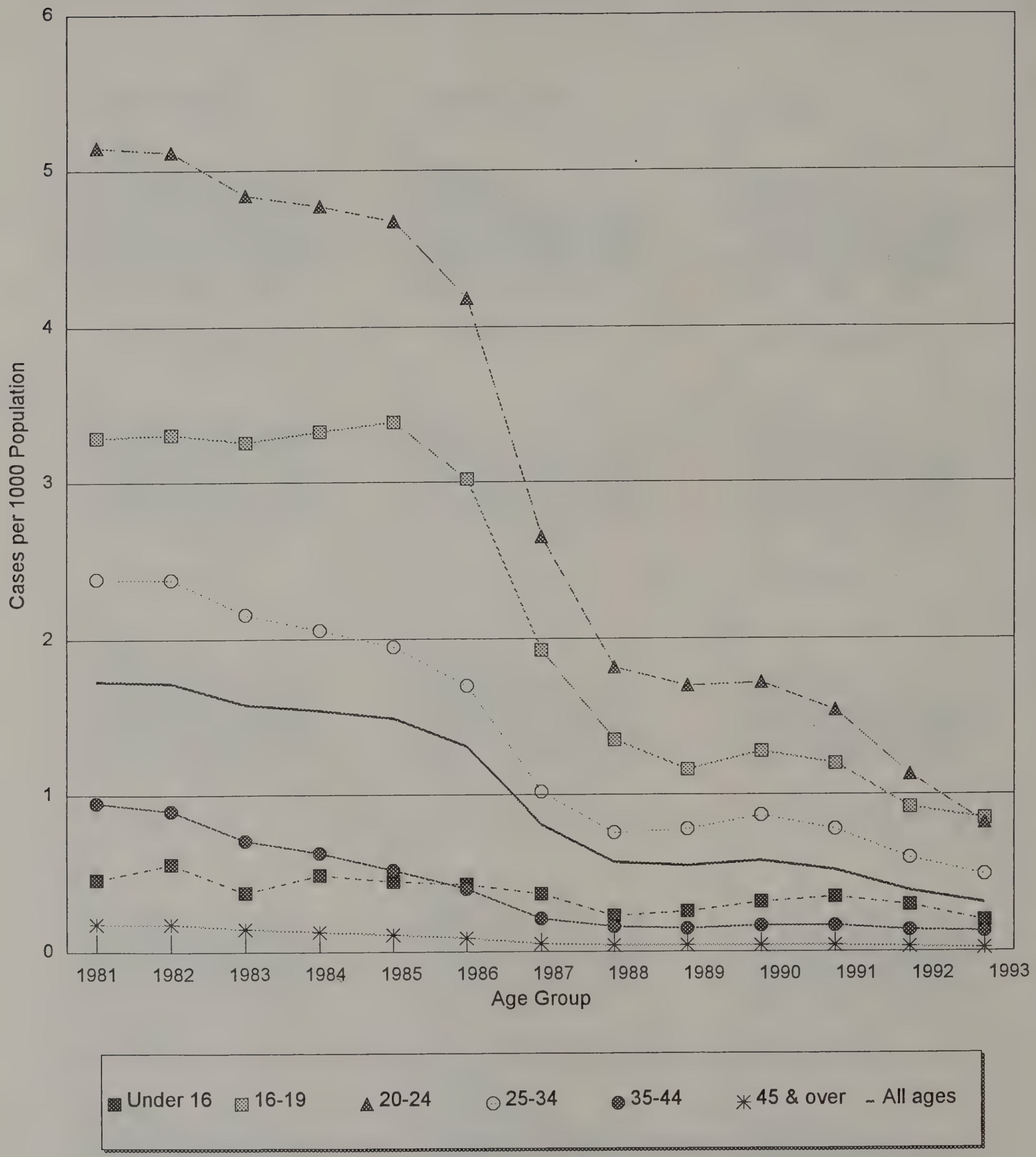
New cases of post pubertal gonorrhoea (B1.1-B1.3)

1981 to 1993



Source : DH SD2B KC60

Figure 16



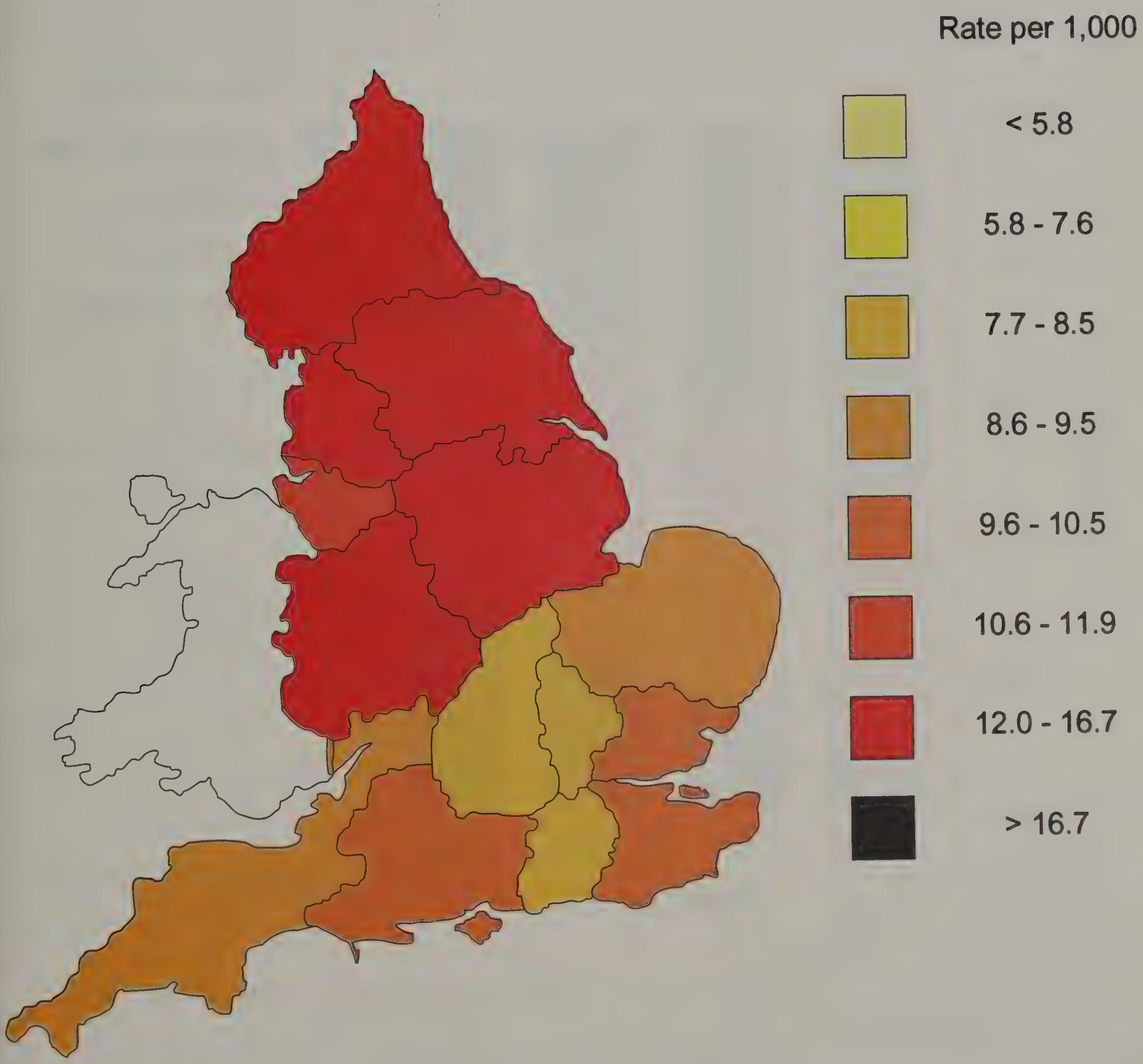
New cases of post-pubertal gonorrhoea (B1.1-B1.3)
1981 to 1993

Source : DH SD2B KC60

Figure 17

Conception Rates Below Age 16

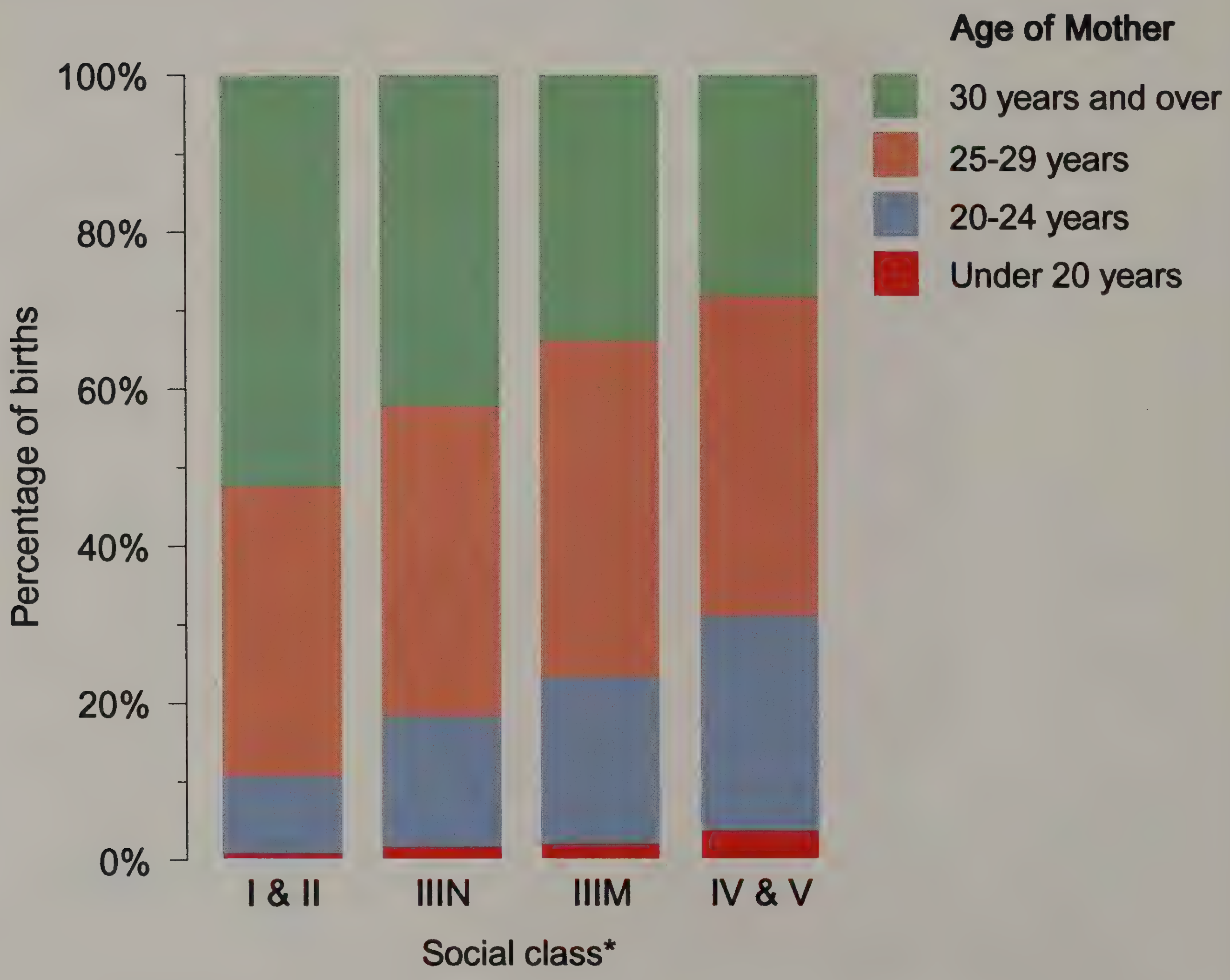
by RHA England 1989-91



Source: Public Health Common Data Set 1993

Live Births within Marriage

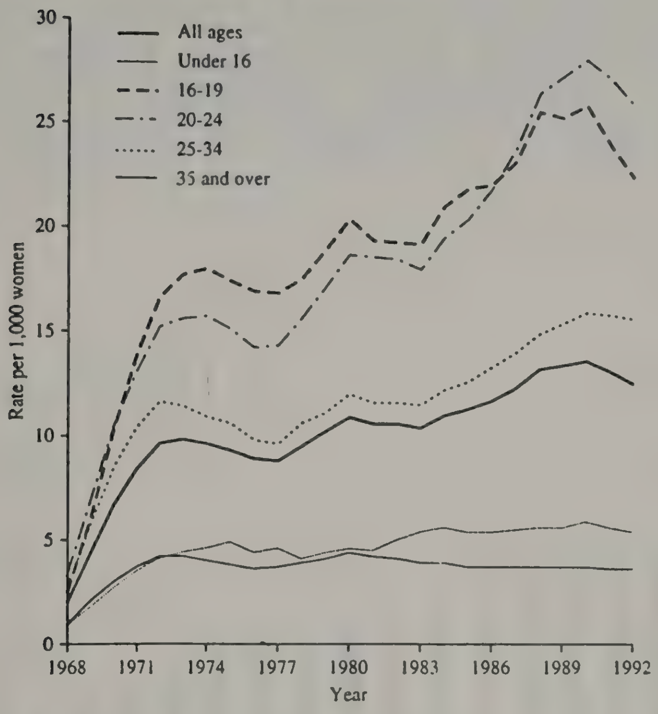
by social class* England and Wales 1992



* Social class of father as defined by occupation

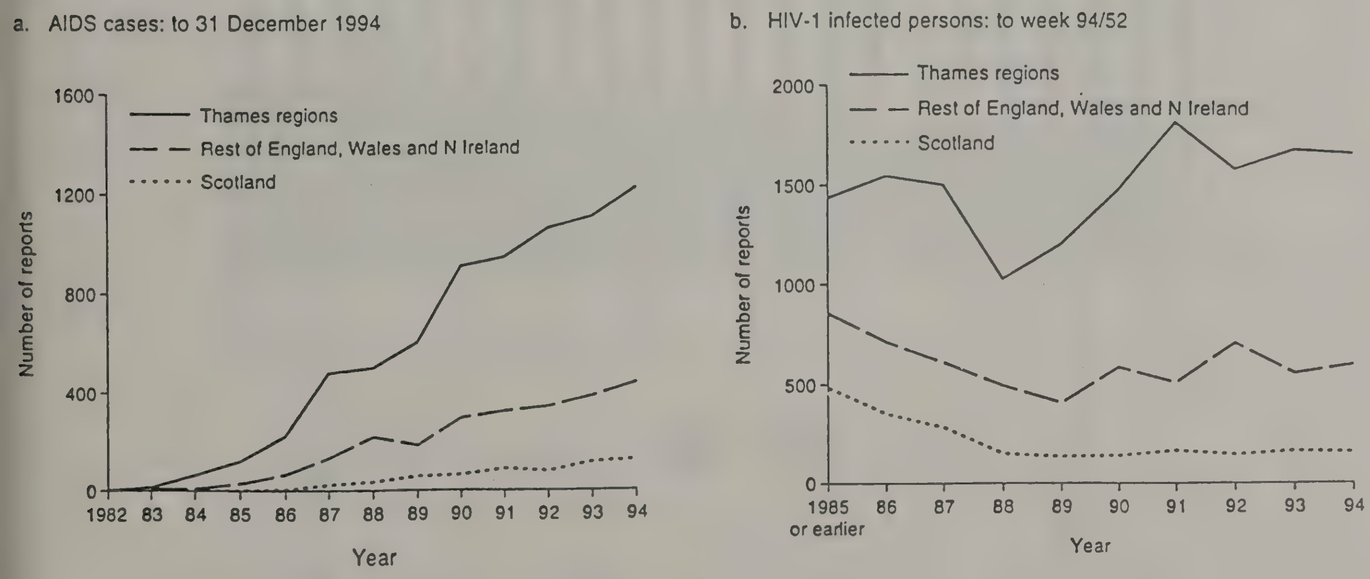
Source: OPCS Birth Statistics 1992, Series FM1

Figure 19 Age-specific abortion rates, residents of England and Wales, 1968-92



Source: OPCS abortion statistics 1992

Figure 20 Geographical distribution of reports by year: United Kingdom

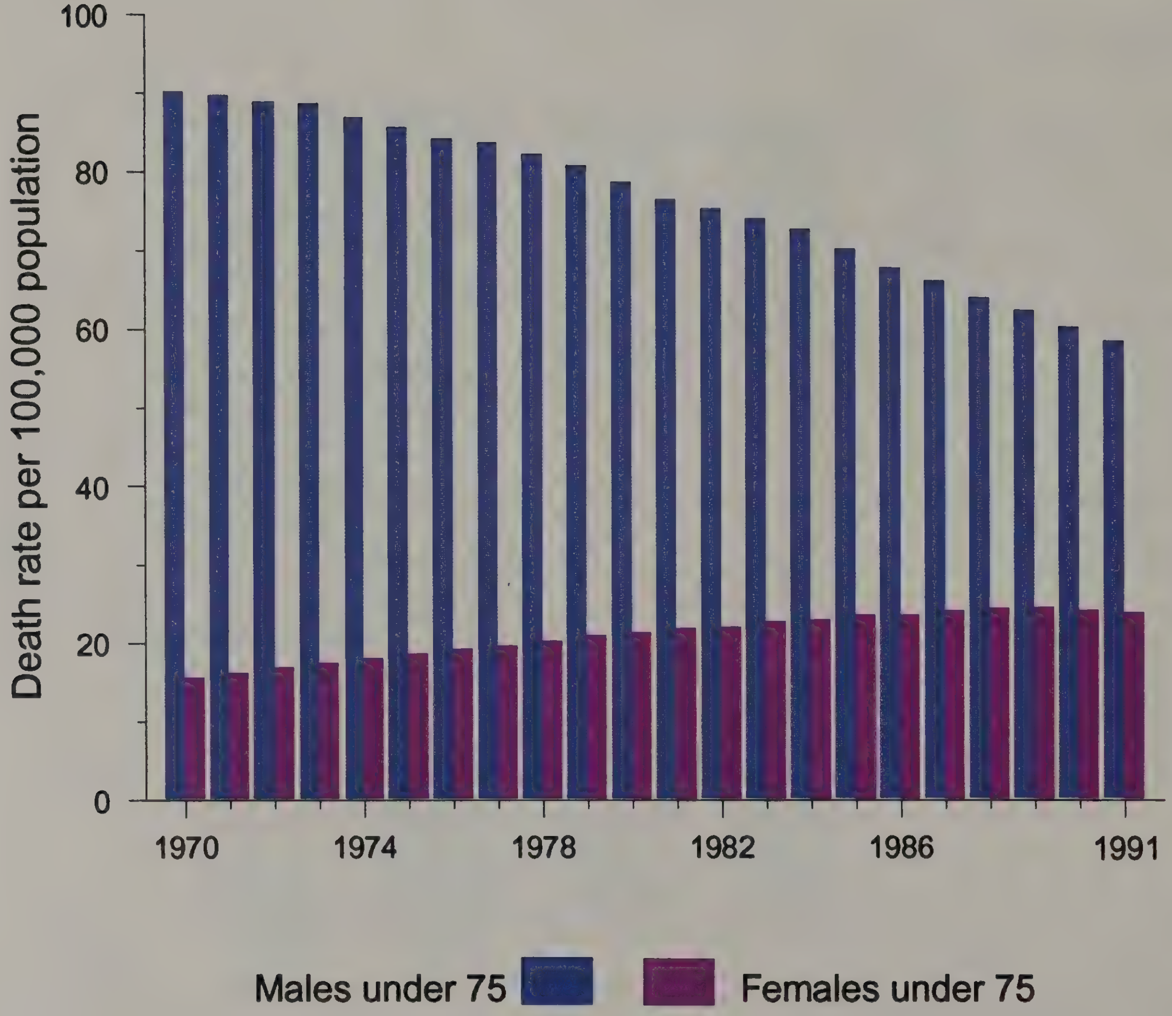


Source: CDR Weekly Vol 5, No 16, 21 April 1995

Figure 21

Death rates for Lung Cancer

by sex England 1969-1992*#



*Rates are calculated using a 3 year average plotted against the middle year of average.

# Data for 1981 were affected by industrial action by registrars and are excluded, thus rates for 1980 and 1982 are based on two year averages.

Rates are calculated using the European Standard Population to take into account differences in age structure.

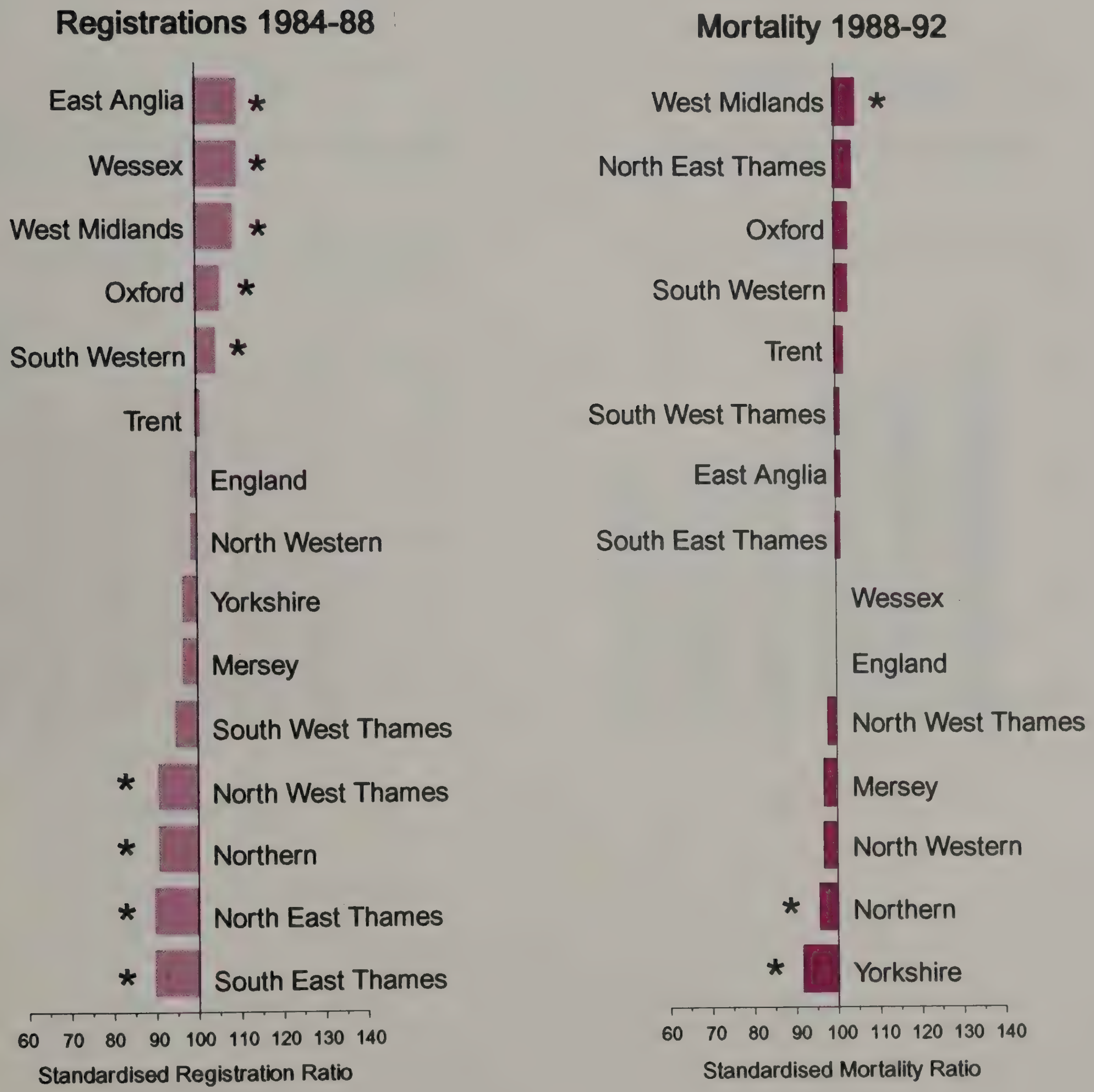
Source: OPCS (ICD 162)

Figure 22

Registration of and Mortality from Breast Cancer

by RHA England 1984-88, 1988-1992

England and Wales= 100



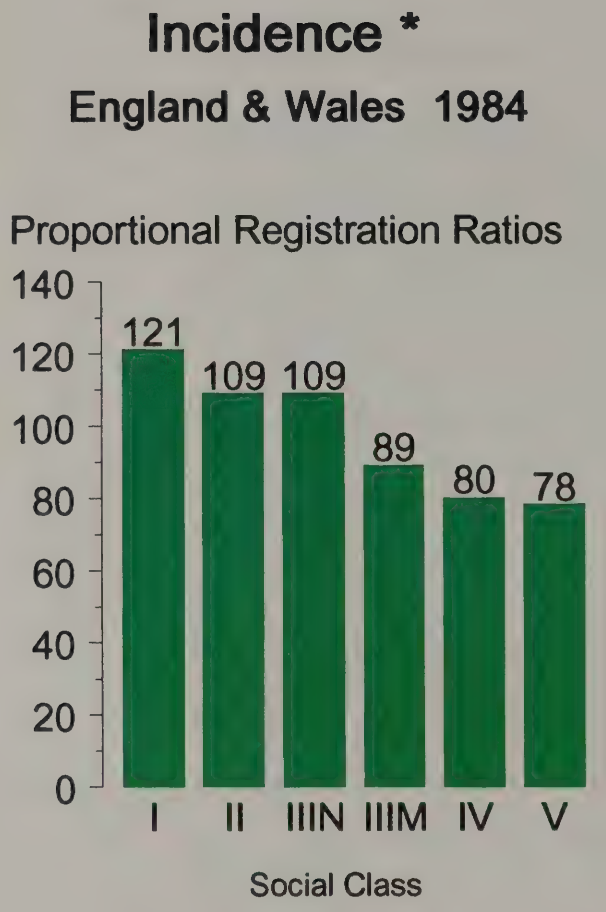
* Significantly different from England at 5% level

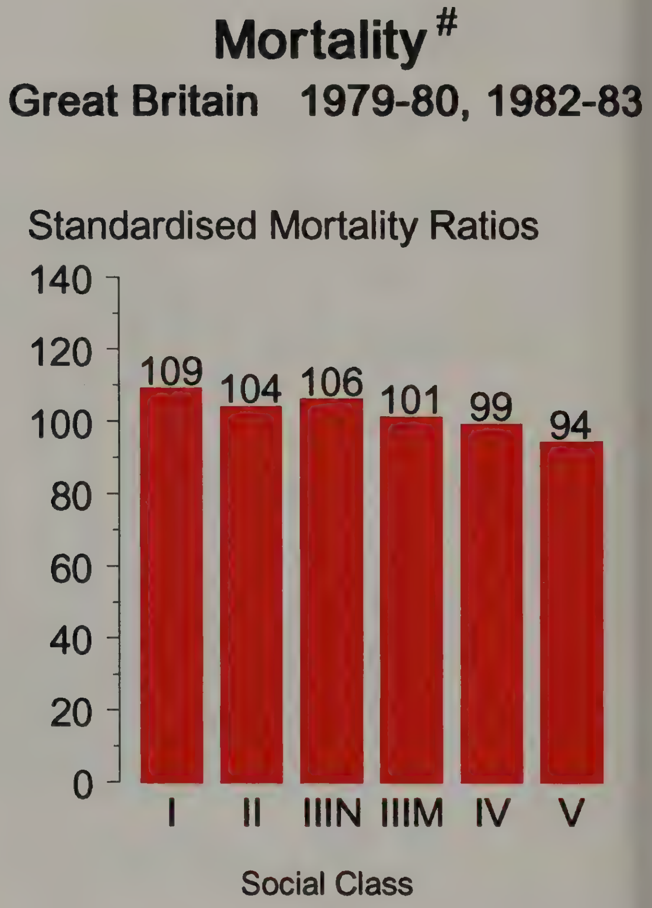
Source: Public Health Common Data Set 1993

Figure 23

Female Breast Cancer

Socio-economic variations



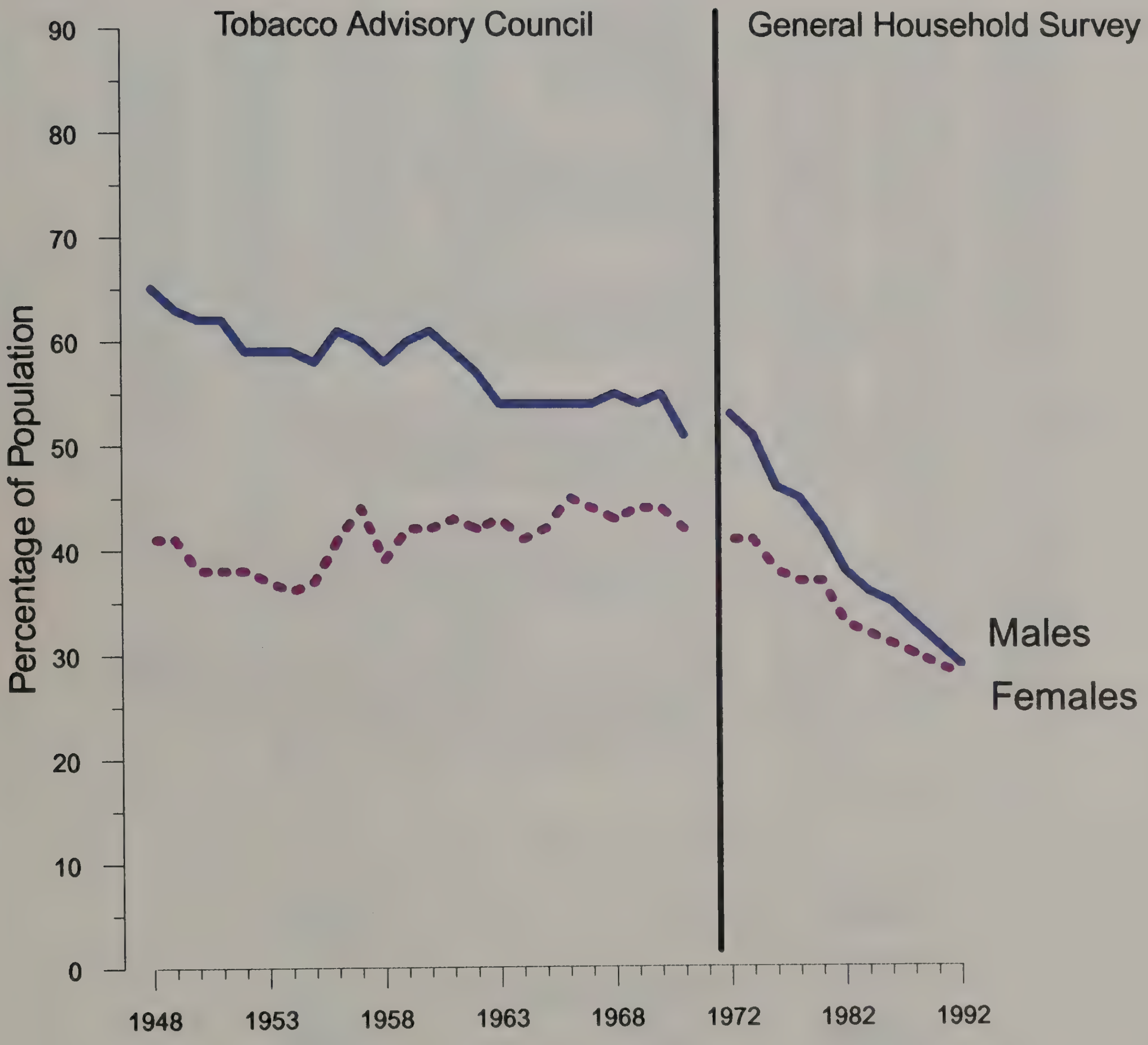


Source: * OPCS Cancer Statistics: registration
OPCS Occupational Mortality: Decennial supplement no.6

Figure 24

Percentage of Cigarette Smokers * in the Population

by sex Great Britain 1948-1992



* Adults aged 16 and over

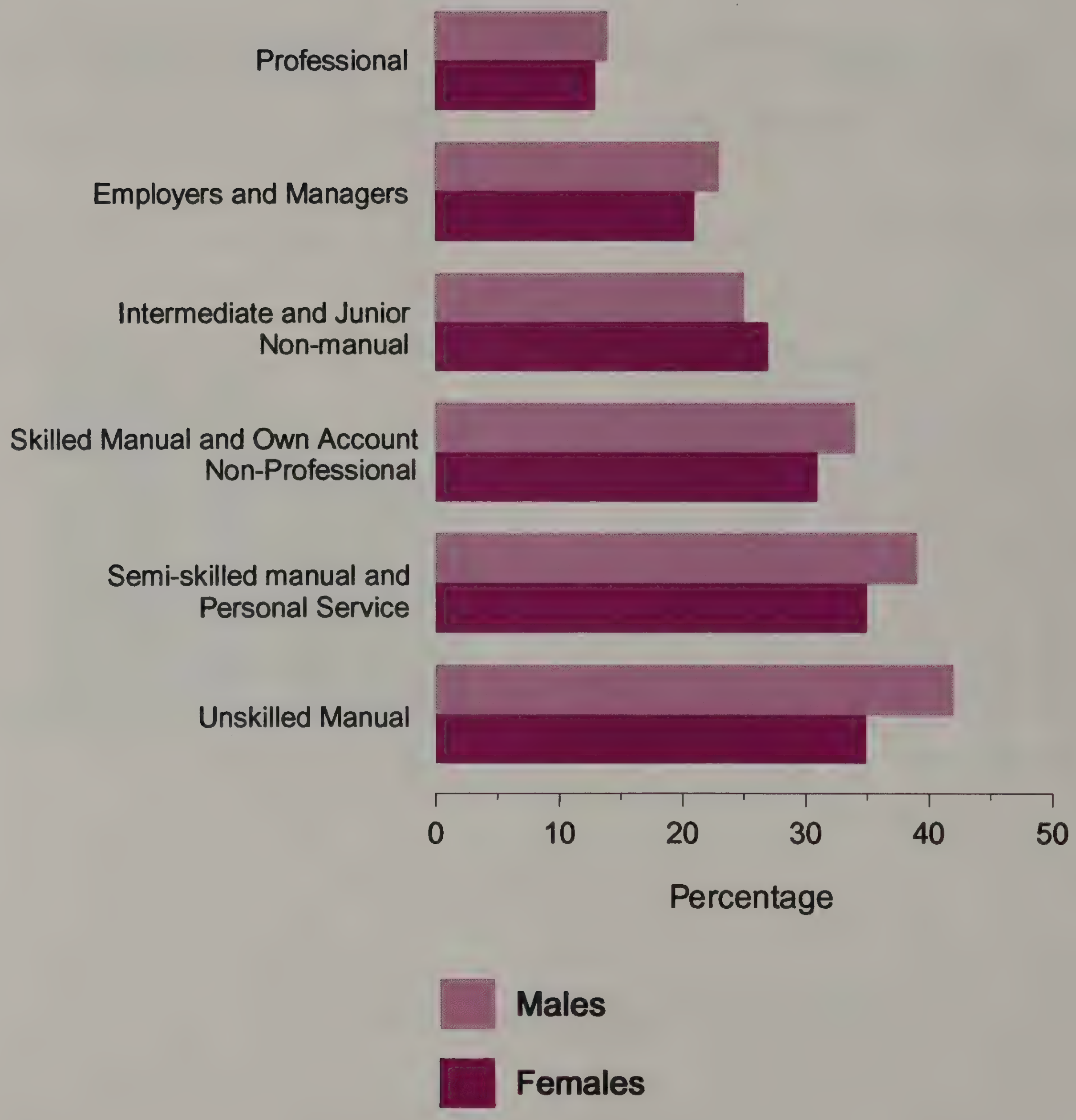
The data for 1948 to 1971 are not on exactly the same basis as the data for 1972 to 1992

Source: Wald N. and Nicholaides-Bouman A. eds. UK Smoking Statistics (Tobacco Advisory Council)
OPCS Monitor SS 91/3, and General Household Survey

Prevalence of Cigarette Smoking

by sex and socio-economic group Great Britain 1992

Adults aged 16 and over



Source: OPCS General Household Survey

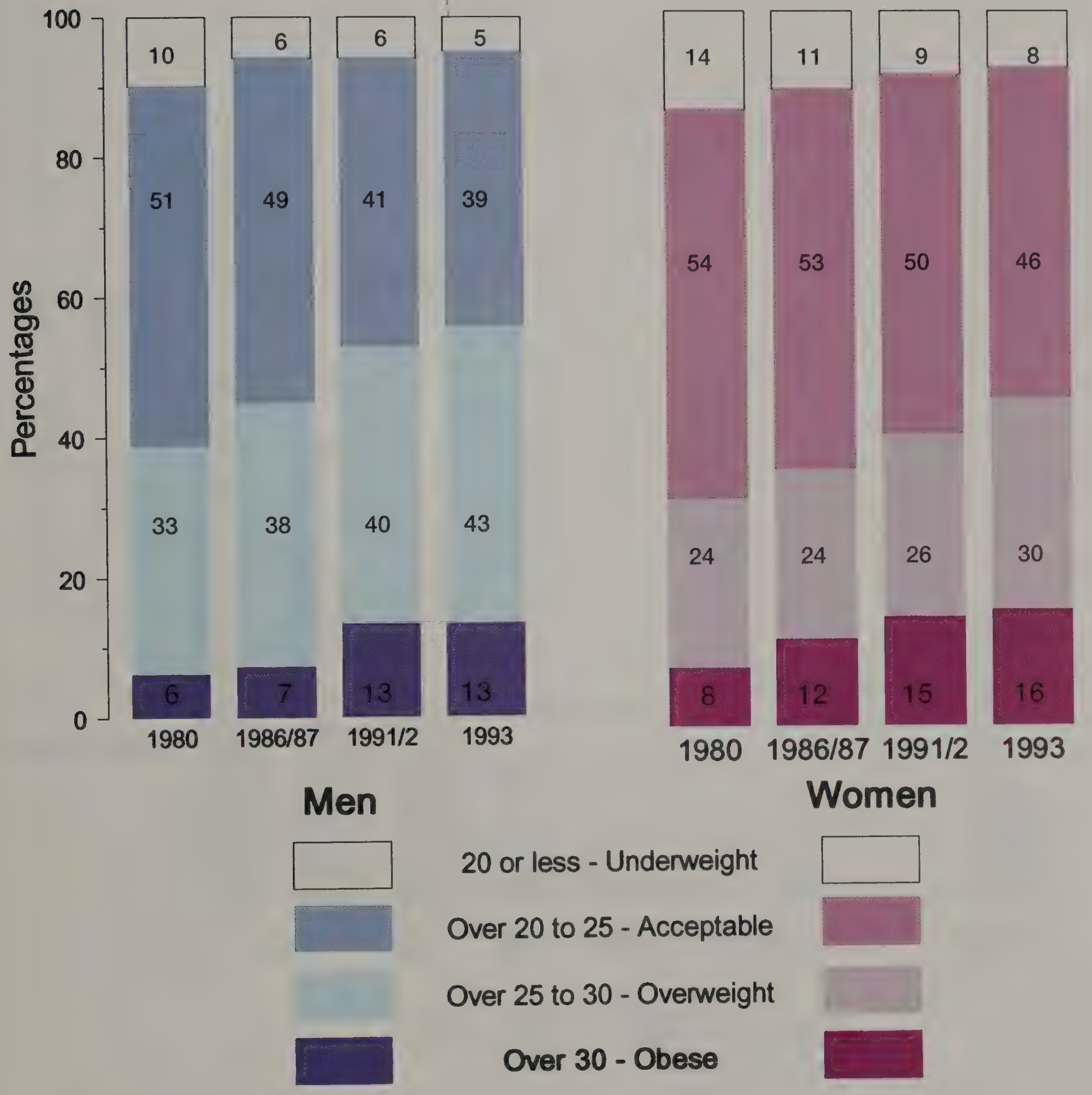
Figure 26

Percentage Distribution of Adults by Body Mass Index †

1980, 1986/7, 1991/2 and 1993

by sex, age 16-64 years

Great Britain / England*



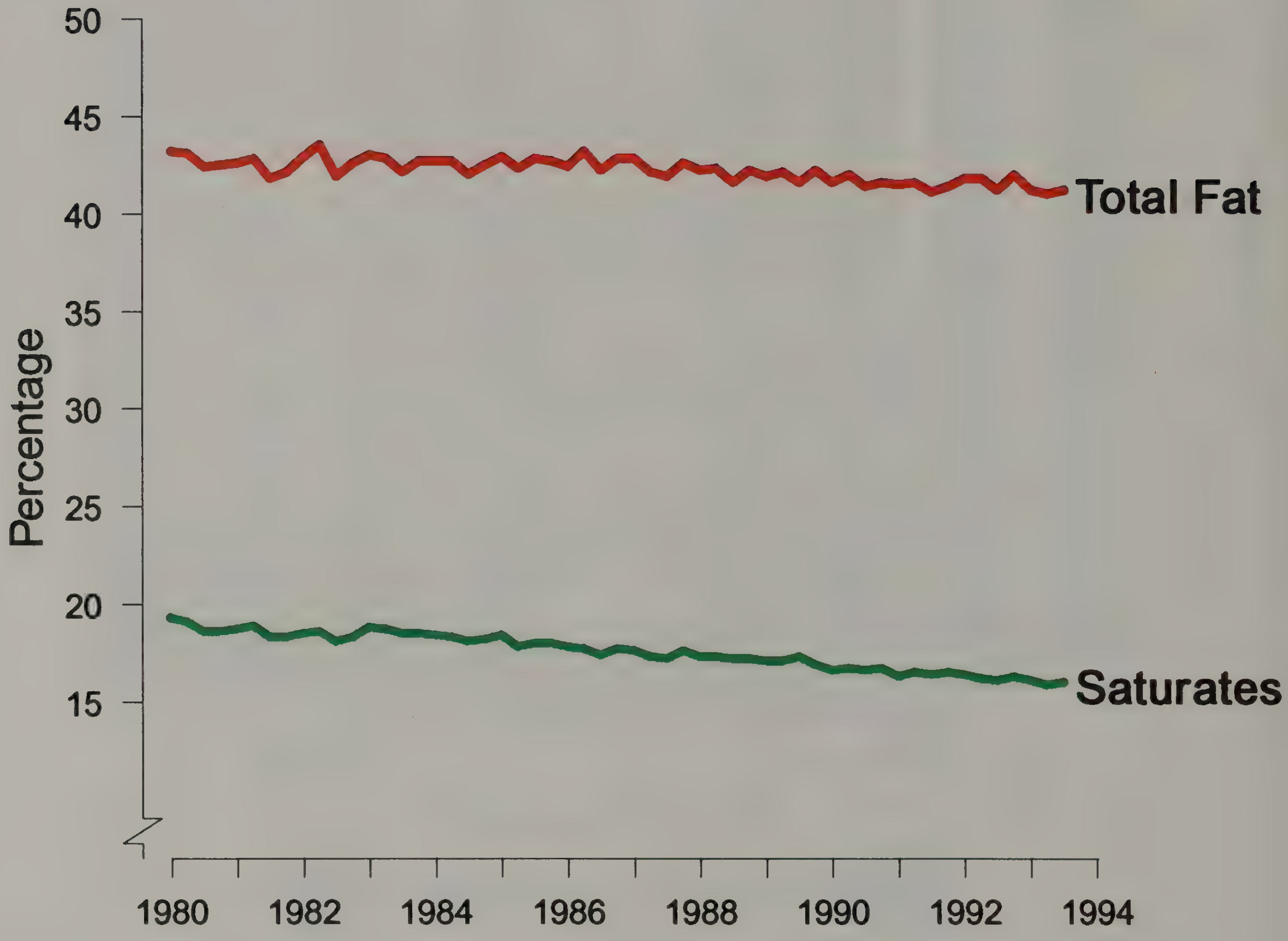
† Body Mass Index = $\frac{\text{Weight}}{\text{Height}^2}$

* 1980 data are for Great Britain, other data are for England.

Sources: OPCS The heights and weights of adults in Great Britain, 1980
OPCS The Dietary and Nutritional Survey of British Adults, 1986/87
OPCS Health Survey for England, 1992 and 1993

Percentage Food Energy from Total Fat and Saturates

England 1980-1993 (quarterly)

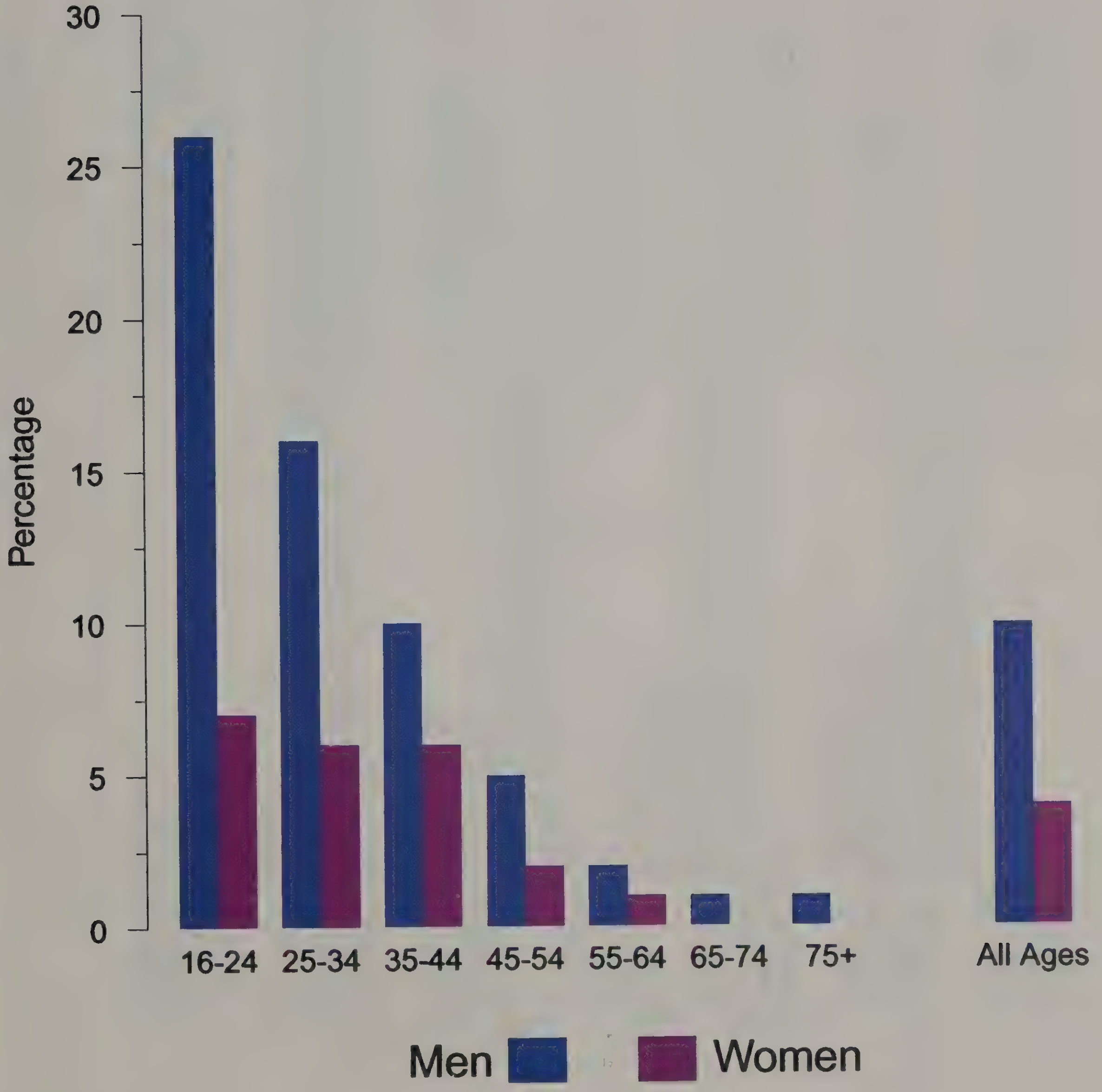


Source: MAFF National Food Survey

Figure 28

Regular participation* in vigorous Physical Activity

by sex and age England 1993



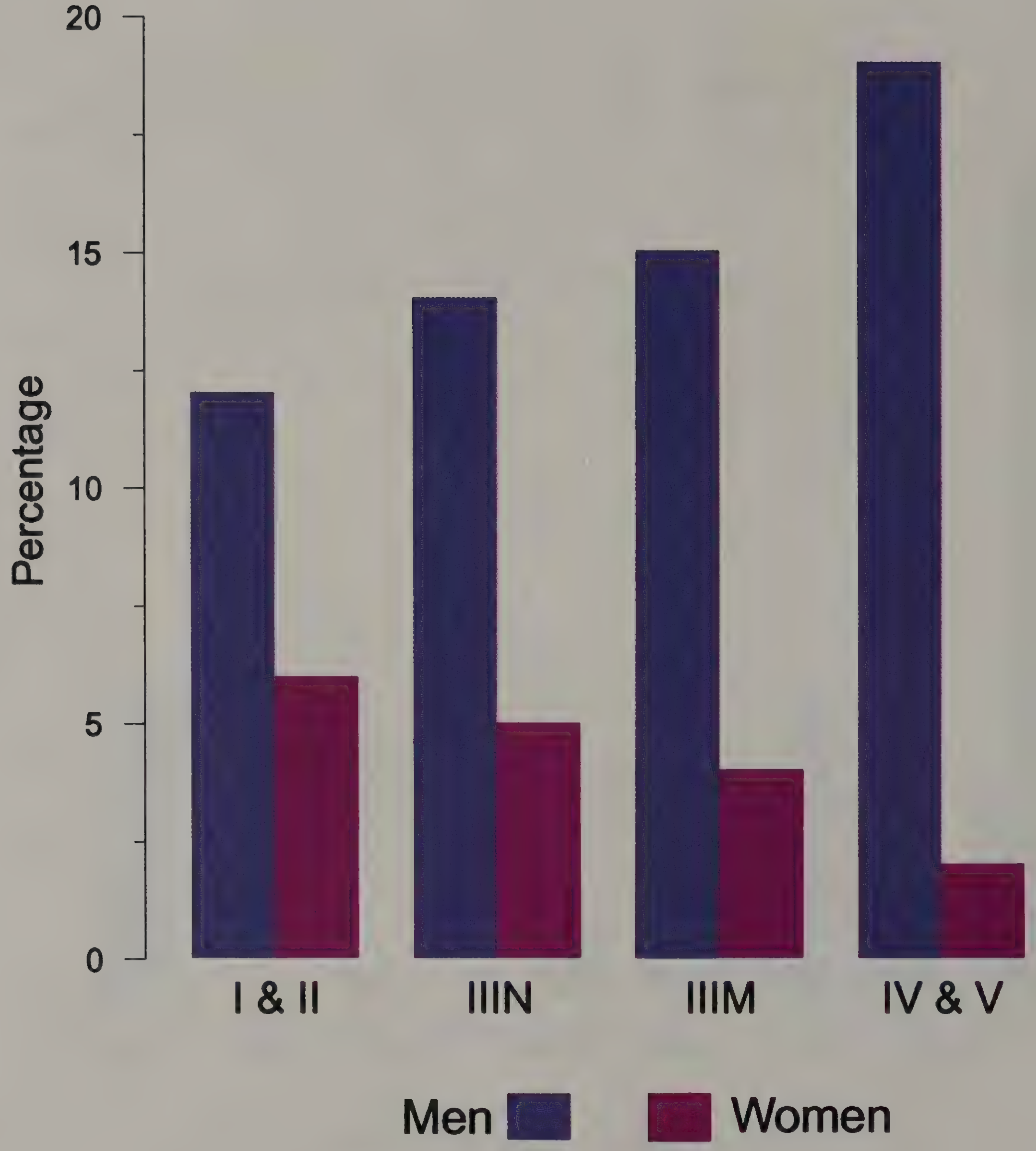
* Regular Participation: 20 minutes at least 3 times a week

Source: OPCS Health Survey for England

Figure 29

Regular participation* in vigorous Physical Activity

by social class# age 16-74 England 1990



* Regular Participation: 20 minutes at least 3 times a week

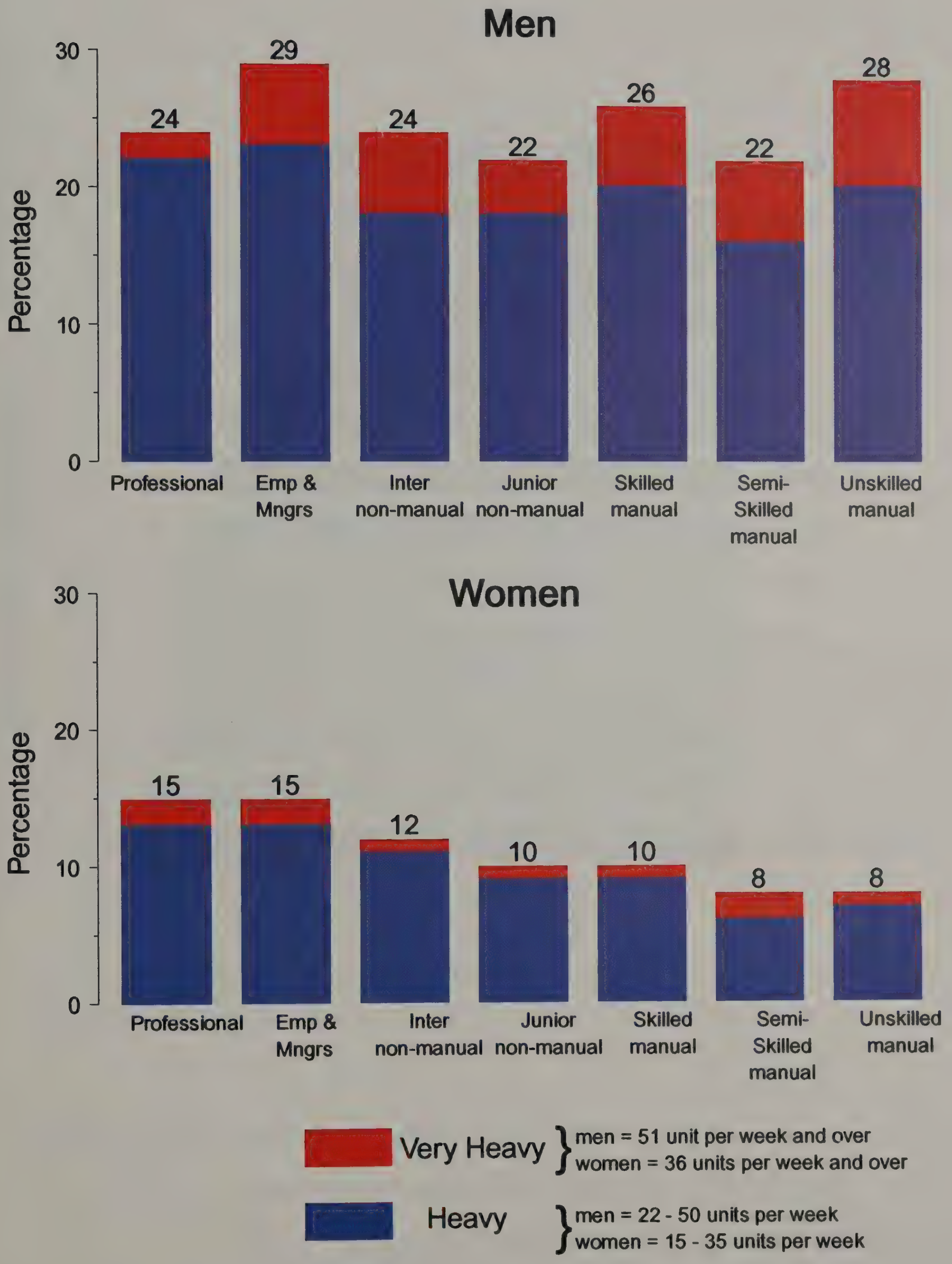
# Social class of head of household

Source: HEA / Sports Council,
Allied Dunbar National Fitness Survey

Figure 30

Alcohol Consumption above Sensible Limit

by socio-economic group, adults 16 and over Great Britain 1992

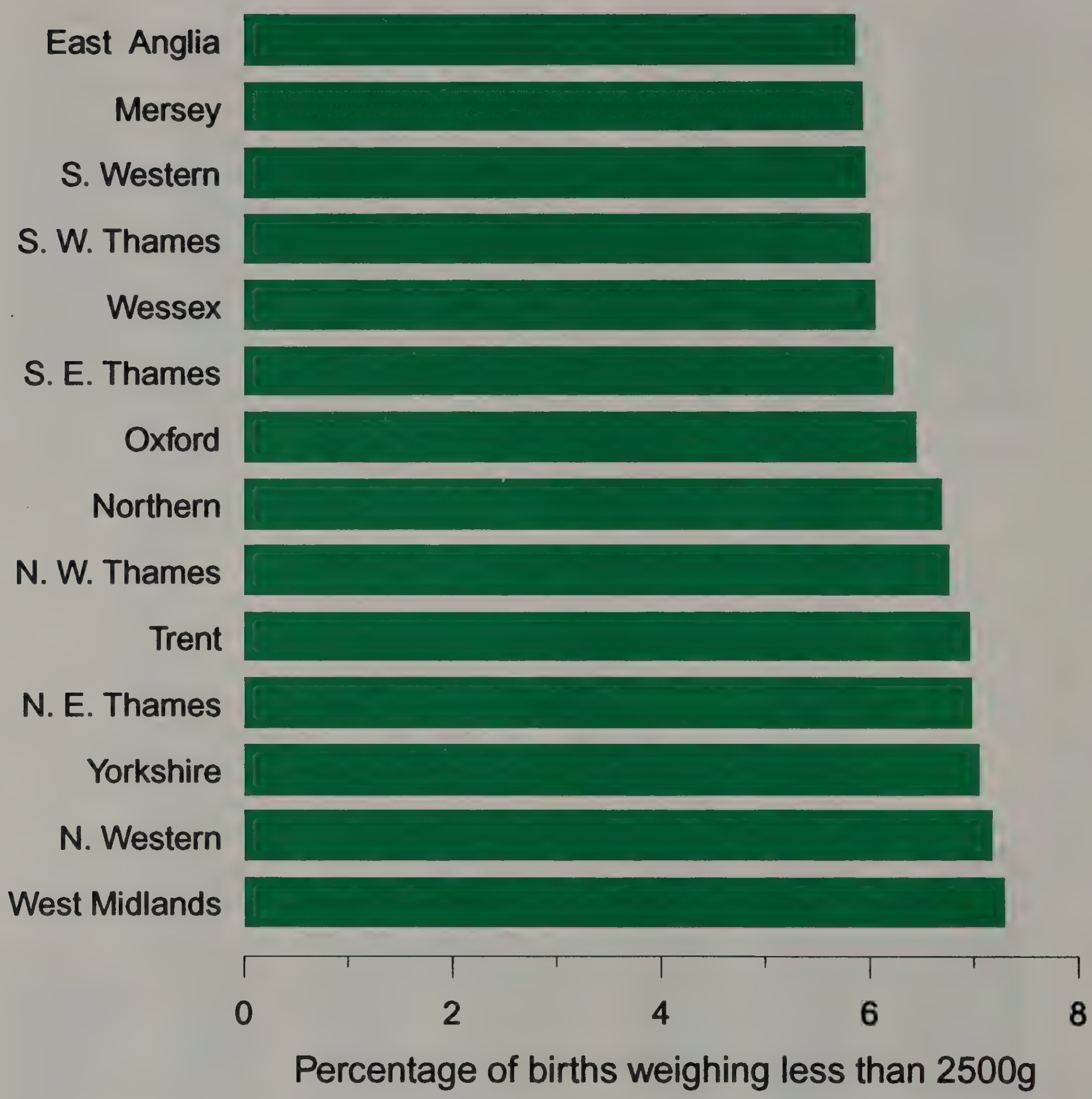


Source: OPCS General Household Survey

Figure 31

Live Births Weighing less than 2500g

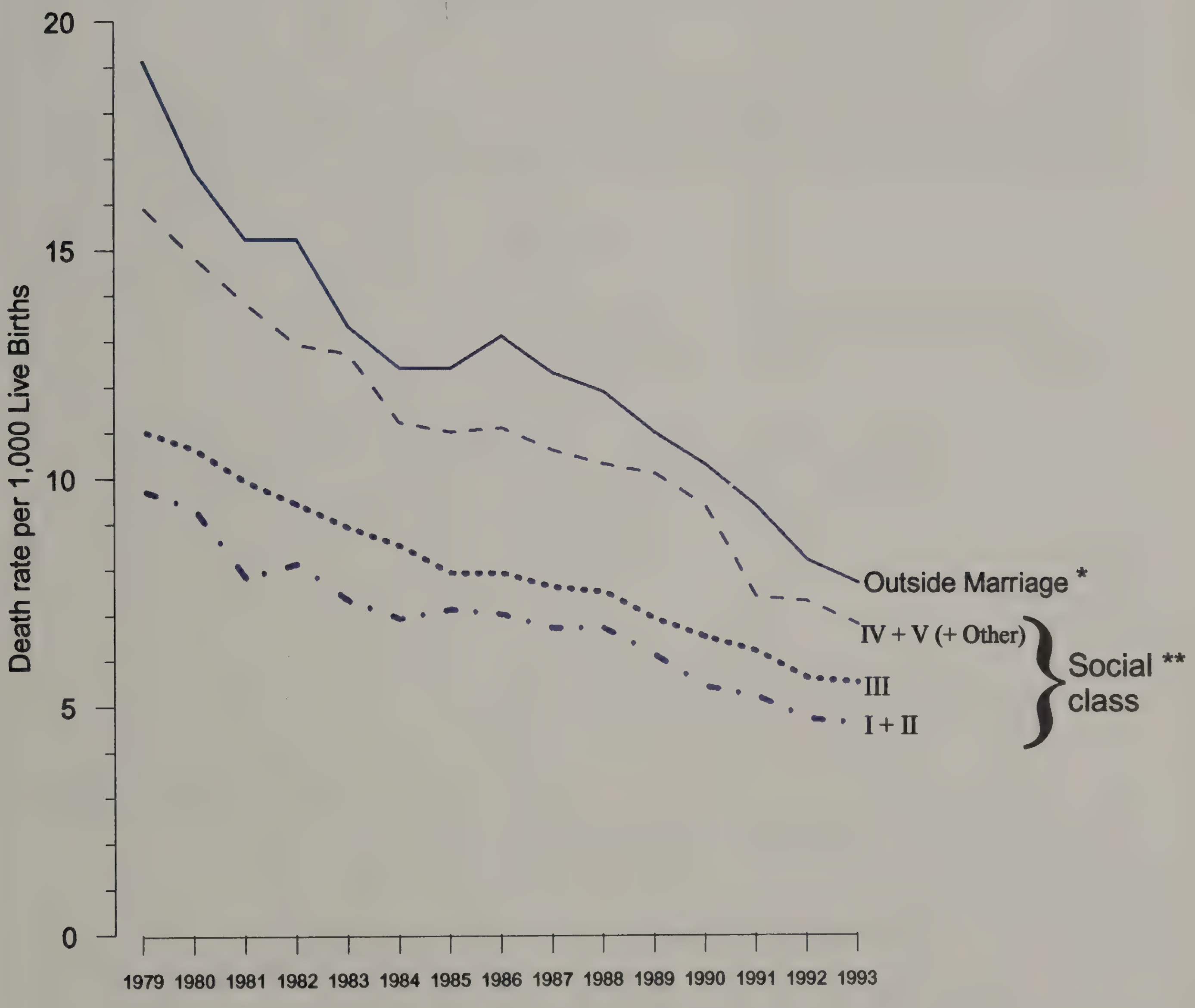
by RHA England 1991



Source: OPCS Mortality Statistics perinatal and infant: social and biological factors

Infant Deaths Rates

by Social Class England and Wales 1979-1993



* Data includes births which were jointly registered by both parents.

** Social class based on father's occupation (at death registration) for births inside marriage.

Source: OPCS Mortality Statistics perinatal and infant: social and biological factors

TABLE A Percentage who had had an accident in the 3 months before interview by socio-economic group by age and sex

All persons *Great Britain: 1987-89 combined*

Age	Socio-economic group*								
	Males			Females			Total		
	Non-manual	Manual	Total	Non-manual	Manual	Total	Non-manual	Manual	Total
				Percentages					
0-4	4	5	5	5	5	5	4	5	5
5-15	6	7	6	5	4	4	5	5	5
16-24	7	11	10	4	5	4	5	8	7
25-44	4	7	6	3	3	3	3	5	4
45-64	2	3	3	2	3	3	2	3	3
65 or over	2	1	2	4	3	4	3	3	3
All persons	4	6	5	3	3	3	4	5	4

* Married women whose husbands were in the household are classified according to their husband's occupation ;children under 16 are classified according to their father's occupation. Members of the Armed Forces, persons in adequately described occupations and all persons who have never worked are excluded.

TABLE B Type of accident by socio-economic group for men aged 16-24

Men aged 16-24 *Great Britain: 1987-89 combined*

Type of accident	Socio-economic group		
	Non-manual	Manual	Total
	Percentages		
Home or garden	1	2	2
During working hours	2	5	4
Road	2	2	2
While participating in physical exercise	3	2	3
Total	7	11	10

Source: General Household Survey

TABLE C

LUNG CANCER

INCIDENCE by SOCIAL CLASS (1984)

Proportional Registration Ratios*

(Males)

	PRR
SC I	77
SC II	96
SC IIIN	106
SC IIIM	129
SC IV	135
SC V	139

* All registrations for each social class = 100

Source: Cancer Statistics registrations 1984, MBI No.16

TABLE D

LUNG CANCER

MORTALITY by SOCIAL CLASS (c 1981)

STANDARDISED MORTALITY RATIOS*

Social Class	Males	Females
SC I	43	48
SC II	63	69
SC IIIN	80	75
SC IIINM	120	115
SC IV	126	126
SC V	178	149

* Great Britain = 100

Source: Occupational Mortality DS No.6 1979/80, 1982/3

TABLE E

Cigarette smoking prevalence (%) adults (1992)

	Males	Females
Professional	14	13
Employers & managers	23	21
Intermediate and junior non-manual	25	27
Skilled manual and own account non-professional	34	31
Semi-skilled manual and personal service	39	35
Unskilled manual	42	35

Source : General Household Survey 1992

TABLE F

MALIGNANT MELANOMA

INCIDENCE by AREA (1989)

STANDARDISED REGISTRATION RATIOS*

	Males	Females
Northern	73	73
Yorkshire	99	111
Trent	84	91
East Anglian	103	105
NW Thames	107	88
NE "	113	98
SE "	102	88
SW "	101	106
Wessex	129	167
Oxford	82	108
South Western	146	146
West Midlands	87	75
Mersey	84	78
North Western	90	94

* England and Wales = 100

Source : Cancer Statistics registrations 1989, MBl No.22

MALIGNANT MELANOMA

INCIDENCE by SOCIAL CLASS (1984)

PROPORTIONAL REGISTRATION RATIOS*

	Males	Females
SC I	150	(97)
SC II	108	111
SC III NM	115	95
SC III M	57	67
SC IV	67	58
SC V	(34)	(51)

* All registrations for each social class = 100

NB : ( ) based on small numbers

Source : Cancer Statistics registrations 1984, MBl No.16

MALIGNANT MELANOMA

MORTALITY by SOCIAL CLASS (c 1981)

STANDARDISED MORTALITY RATIOS* (Men, 20-64; Women, 20-59y)

	Males	Females
SC I	133	118
SC II	126	107
SC III NM	134	112
SC III M	85	107
SC IV	89	88
SC V	82	98

* Great Britain = 100

Source : Occupational Mortality DS No.6 1979/80, 1982/3

MALIGNANT MELANOMA

MORTALITY by COUNTRY OF BIRTH (c 1981)

STANDARDISED MORTALITY RATIOS*
(for age 20-69y)

	Males	Females
Indian sub-continent	29	31
Caribbean commonwealth	22	49
African commonwealth	32	20
Mediterranean commonwealth	23	76
Australia	237	540

* England and Wales = 100

Source : Mortality and Geography DS No.9

TABLE J

CERVICAL CANCER

MORTALITY by AREA (1992)

STANDARDISED MORTALITY RATIOS* (all ages)

RHA	
Northern	101
Yorkshire	111
Trent	98
East Anglian	82
North West Thames	96
North East Thames	104
South East Thames	108
South West Thames	65
Wessex	70
Oxford	76
South Western	114
West Midlands	108
Mersey	118
North Western	110

* England and Wales = 100
Source : DH5 No.19, 1992

CERVICAL CANCER

INCIDENCE by AREA (1989)

STANDARDISED REGISTRATION RATIOS*

RHA	
Northern	99
Yorkshire	124
Trent	91
East Anglian	81
North West Thames	67
North East Thames	77
South East Thames	88
South West Thames	79
Wessex	121
Oxford	57
South Western	95
West Midlands	101
Mersey	134
North Western	106

* England and Wales = 100

Source : Cancer Statistics registrations 1989, MBl No.22

CERVICAL CANCER

MORTALITY by SOCIAL CLASS (c 1981)

STANDARDISED MORTALITY RATIOS* (20-59y)

SC I	29
SC II	60
SC III NM	73
SC III M	112
SC IV	124
SC V	186

* Great Britain = 100

Source : Occupational Mortality DS No.6 1979/80, 1982/3

CERVICAL CANCER

INCIDENCE by SOCIAL CLASS 1984

PROPORTIONAL REGISTRATION RATIOS*

SC I	(55)	[based on only 7 registrations]
SC II	72	
SC III NM	83	
SC III M	90	
SC IV	117	
SC V	146	

* All registrations for each social class - 100

NB : ( ) based on small numbers

Source : Cancer Statistics registrations 1984, MBl No.16

TABLE N

CERVICAL CANCER

MORTALITY by COUNTRY OF BIRTH

	STANDARDISED MORTALITY RATIOS* (for ages 20-69y)
Indian sub-continent	66
Caribbean commonwealth	112
African "	38
Mediteranean "	111
Australia	57

* England and Wales = 100

Source : Mortality and Geography DS 9

TABLE O

CERVICAL CANCER

INCIDENCE by COUNTRY OF BIRTH

PROPORTIONAL REGISTRATION RATIOS*

England and Wales	94	
Scotland	80	
Ireland	121	
Indian sub-continent	107	
West Indies	(147)	[based on only 16 registrations]
Africa	(60)	[" " " 7 "]

* All registrations for each country of birth = 100

NB : ( ) based on small numbers

Source : Cancer Statistics registrations 1984, MB1 No.16

ANNEX D

In the light of the review, a checklist of points to consider when designing an intervention to reduce variations in health is provided below:

The messages/actions delivered

Would an assessment of the target group's needs help shape the messages/actions appropriately?

Are the intended messages/actions culturally and educationally appropriate to the target group?

Are the intended messages/actions acceptable to the target group? (A pilot test might be advisable to assess this).

Will members of the target group be involved in the design/development of the messages/actions?

Will the messages/actions be fixed (delivered in the same way to everyone) or will they be flexibly delivered?

Will the messages/actions be directed by the client/recipient or by the professional/messenger?

How many component messages/actions will be involved?

Will the messages/actions be repeated?

What opportunities will there be to reinforce the messages/actions?

Are the messages/actions likely to be strongly contested by agencies/individuals outwith the intervention? If so, what might be done to counteract these?

Setting

Where might the intervention be most appropriately delivered?
Examples: home, school, place of worship, health centre. Need to take into account the degree to which it is accesible to and acceptable by the target audience.

Audience/recipients

How homogeneous is the population of interest?

Would it be more appropriate to give deliver the messages/actions to individuals or to groups?

If the messages/actions are to be given to groups, what might be the best composition and size of those groups?

Messenger

Who might be the most appropriate person/group to deliver the messages/actions? e.g. health professional, teacher, community volunteer, trained peer.

You might like to consider:

- how credible are these people to the target group?
- how readily do the target group identify with these people?

What personal skills, training, and support might these people need?

Support materials/resources

Does the intervention require the use of written or audiovisual materials?

If so, what are the most appropriate materials to help convey the messages/actions? e.g. leaflets, videos, audiocassettes considering:

- the language abilities and preferences of the target group
- the literacy skills of the target population
- the availability of technology required to make use of the material

Would the provision of assistance with transport and/or child care make it easier for members of the target group to attend for the desired health care intervention, or to receive the messages/actions which comprise this intervention?

Cost Effectiveness

Is the proposal cost-effective compared to other interventions? What arrangements are in place to assess this if the answer is not known?

© Crown Copyright
Produced by Department of Health
3446 1R 3k Nov 95 (04)
CHLORINE FREE PAPER